THE AMERICAN GAS LIGHT JOURNAL

PUBLISHING OFFICE No. 42 PINE STREET

DEVOTED TO THE INTERESTS OF ILLUMINATION, HEATING, MECHANICAL, CHEMICAL AND GENERAL SCIENCE.

VOLUME XC., No. 25. Whole No. 1,776. | NEW YORK, MONDAY, JUNE 21, 1909. | $3 PER ANNUM, IN ADVANCE.

A. M. CALLENDER & CO., Proprietors. C. H. WADELTON, Manager. THOMAS J. CUNNINGHAM and ELBERT P. CALLENDER, Editors.

ENTERED AT THE POST OFFICE AT NEW YORK, N. Y., AS SECOND-CLASS MATTER.

Published on each Monday of the year, at No. 42 Pine Street, New York City.

Telephone.—2906 John.

Terms of Subscription, Including Postage.—For the United States, $3; Canada, $4 per annum. European countries, $5 (£1—25 francs).

Remittances should be made either by post office order, express money order, registered letter, or bank draft on New York, payable to the order of A. M. Callender & Co.

Correspondence.—Wishing to make this JOURNAL a gazette of intelligent discussion to those of our readers who may wish to gain or give information on the subjects to which its columns are devoted, correspondence is solicited for publication from all who make the study of those subjects a pleasure or a profession.

Indexes for the previous 6 months will be found in the First number of July and the First number of January.

Collections are invariably made directly from this office for subscriptions, advertisements, etc. We have agents to solicit the same, but they are not authorized to receipt for money.

The American News Company, Nos. 39 and 41 Chambers street, New York, are agents for this JOURNAL. Newsdealers will send orders to them. All payments to be made in advance. Single copies, 10 cents.

The Public Lighting Tables of the American Meter Company will be found in the page advertisement of that Company.

CONTENTS.

An Asterisk (*) Denotes an Illustrated Article.

OFFICIAL NOTICE—

Fifth Annual Meeting, Iowa District Gas Association.....1109

NOTICE—

Wrinkle Department, American Gas Institute.....1109

EDITORIALS—

Briefly Told.....1110

Summer Meeting, New York Section, Illuminating Engineering Society—Our Semi-Centennial Issue—Newburgh (N. Y.) Boys Get Together.

BUREAU OF INFORMATION, THE AMERICAN GAS INSTITUTE.....1110

Answer to Question No. 54.

Eighth Annual Convention, Wisconsin Gas Association—Report of Proceedings.....1111

First Day, Morning Session—Report of Executive Committee—New Members—Resignations—Report of Secretary and Treasurer—Consideration of Some Special Matters—Address of the President.

*Boiler Shop Economy, by "Engineer".....1112

Address of Welcome, Natural Gas Association of America, by Gov. Harmon.....1113

Response Thereto by Mr. J. W. McMahon.....1114

The Commercial Side, by Mr. L. S. Bigelow.....1114

Difficult Problems which Public Utility Commissions are Endeavoring to Solve, by Mr. C. H. Abell.....1120

Collectedness in Making Collections.....1122

ITEMS OF INTEREST FROM VARIOUS LOCALITIES.....1122

Financing the Cost of New Plant for Providence, R. I.—Something from Los Angeles, Cal.—Mr. F. D. Murphy Goes Higher—Mr. Cutts Returns to His Old Job—Mrs. Maloney to Mrs. Muldoon—Annual Meeting, Georgetown, D. C.—Contract for the Cruse-Kemper Company—Personal—Again in Service, Ashland, O.—The Boston Consolidated Company's Returns to Shareholders—Main Extensions, Norfolk, Va.—Mr. A. S. Miller Takes Another Step West—Hints from Lincoln, Neb.—Mr. H. I. Lea to Supervise the Work at Ironwood—What do you Think of This?—And Other Items.

The Market for Gas Securities.....1124

[OFFICIAL NOTICE.]

Fifth Annual Meeting of the Iowa District Gas Association.

OFFICE OF THE SECRETARY AND TREASURER,
DES MOINES, IA., May 20, 1909.

ANNOUNCEMENT.

The fifth annual meeting of the Iowa District Gas Association will be held in Waterloo, Ia., June 23, 24 and 25, 1909. The following papers will be read:

"Construction and Operation of a Gas Works in a Town of Five Thousand Inhabitants or Less;" by Mr. Thos. Crawford, Clinton, Ia.

"The Gas Meter: Its Construction, Operation, Sources and Causes of Error, and Its Reliability as a Measuring Device;" by Mr. R. H. Lawlor, Waterloo, Ia.

"The Operation of the Modern Carburetted Water Gas Machine;" by Mr. Wm. J. Bertke, Sioux City, Ia.

"Mutual Interests of the Gas Company and the Community;" by Mr. George McLean, Dubuque, Ia.

"Organizing and Pursuing New Business Campaigns;" by Mr. E. H. Martin, Des Moines, Ia.

"High Candle Power Competition;" by Mr. Elmer Crady, Sioux City, Ia.

Three topics will be discussed in addition to the papers:

"Keeping Ice Out of Steel Holder Tanks and Cups."
"Methods of Disposal of Waste Water from a Gas Works."
"Progress of Tar Market During the Year."

Two special features will form a part of the programme:

1. *An Exhibit of Appliances.*—Suitable space has been leased by the Waterloo Gas Company and is offered free to manufacturers. For details, communicate with Mr. R. H. Lawlor, Chairman, Waterloo, Ia.

2. *An Open Session.*—For free discussion, without a stenographer, will be held the evening of June 23d.

G. I. VINCENT, Sec'y and Treas.

[NOTICE.]

Wrinkle Department, American Gas Institute.

WRINKLE DEPARTMENT, AMERICAN GAS INSTITUTE,
OFFICE OF EDITOR, GAS OFFICE BUILDING,
DETROIT MICH, March 12th, 1909.

To the Members, American Gas Institute: All members of the American Gas Institute are earnestly requested to forward contributions for the Wrinkle Department as soon as possible.

Your co-operation determines the success of the Department.

F. L. CROSS, Editor.

LIBRARY OF CONGRESS JUN 21 1909 SMITHSONIAN DEPOSIT

BRIEFLY TOLD.

Summer Meeting, New York Section, Illuminating Engineering Society.—The interlude of the "dog-days," so far as the New York Section of the Illuminating Engineering Society, and regular meetings is concerned, is on, for the last of its sessions this summer was held in the building of the United Engineering Societies, the evening of the 10th inst. Professor E. L. Elliott directed the proceedings with his usual grace and precision, much to the satisfaction of the threescore who attended. The first paper to engage attention was that by Mr. Louis J. Auerbacher, whose theme was "The Evolution and Development of the Flaming Arc Lamp." He described, in almost too brief scope, the various materials which have been tried or used from time to time to increase the efficiency and intensity and serviceability of the electric arc, his story including a brief description of the flaming arc lamps in the market to-day—"Bremer," "Blondel," "Beck," Excello," Jandus," and the like; and it certainly is to his credit that he made the plain admission that all these researches, studies and experiments were due to the gas mantle that resulted from the studies of Dr. Auer von Welsbach. The discussion was not confined, however, to the "flaming arc lamp," and it is also worthy of note, and curiously, too, that its color value came in for a greater share of attention than did its efficiency. Mr. W. H. Gardiner, whose contribution to the speechmaking was in that gentleman's best vein, albeit it was somewhat didactic, had close relation to the "daylight effects," and Mr. Millar had, as usual, quite a chapter in his remarks on prismatic glassware and "the flame." Mr. Rowe discussed the tariff especially with reference to possible increases in tariff rates on carbons, etc. Prof. Ganz made an incursion into the candle values of the subject, and Mr. Marshall, of course, was again to the front with his delicate reference to the fact "that it is the illumination of the background, and not the type, which enables us to see. To the eye of the writer, it looks strange that the distinction has not been universally accepted up to the current time. In closing the discussion Chairman Elliott proved his capability to discuss intelligently the principles, and theory as well, of illuminating engineering. Respecting large versus small units, he stated tersely that the original objection to the arc lamp was its volume of light. Edison's first, primal invention was the subdivision of the electric current, so that it is rather curious now that with the flaming arc, which easily doubles the volume of the light of the carbon arc, they should want to double that by making lamps with two sets of carbon in them burning at once. An illuminating example of the Yankee's tendency to get the biggest thing on earth. The high efficiency of the flaming arc is largely due to the fact that it gives a yellow light to which the eye is most sensitive. Indeed, makers of optical instruments, in calculating for their lenses, focus them for light that is yellow or slightly greenish. The effect upon the eye of yellow light seems to be not only the most effective but the easiest to bear. Regarding the question of monochromatic light, the fact has been established that the iris contracts more for green than for other colors, which is probably the reason for the sharper definition of the eye under the Cooper-Hewitt light. It would seem to be a property of some particular color rather than of a light that is monochromatic. The other paper considered was submitted by Mr. E. B. Rowe, whose subject was "The Illumination Efficiencies of Various Types of Lighting Installations." The author did not have a printed preparation, and in fact the subject, as to its handling, was mainly a discussion between the author and Mr. Wohlaner, on the physiological versus the physical aspects of illuminating engineering. At a point when the discussion was certainly nearing the point involution, Prof. Elliott came to the rescue by blurting out an idea that the point under discussion was somewhat similar to the one that youngsters heard in school—possibly after they were out of school too—as to "What would happen if an irresistible force met an immovable body?" The next meeting in New York city should be a memorable one, as it will be the occasion of the annual convention. The date has not been definitely settled, but it will be during the first week in October, at the time of the Hudson-Fulton celebration. Any suggestions will be most welcome to the officers of the Society.

Our Semi-Centennial Issue.—In order that our readers may thoroughly understand the plan under which our semi-centennial will be issued next month, we say that it is to consist of at least 100 pages. Of the entire book's space one-half will be given to the publication of original articles, from the pens of men eminent in the gas industry, the subjects to be largely, in fact generally, reminiscent of the advances made in the industry since the time of the appearance of the first issue of this publication. The balance of the book will be given over to advertising, the rates for which have heretofore been publicly given. The advertising space has been taken, and those who, failing to appreciate the exceeding value of this special issue as an advertising medium, until they have the issue in front of them, may not regret their inaction on the basis of the excuse that the matter had not been put before them in a sufficiently clear manner. One copy of this issue will be mailed to our regular subcribers and advertisers, *without charge* of any kind to them, and those wishing extra copies will be charged therefor at the rate of 50 cents per number in every instance. It has not been our custom, nor has it been our necessity, to make claims respecting our position in the field of American gas industry; for our position therein was never in danger, in so far as leadership and influence for good on the destinies of the trade as a whole are concerned. In this instance, however, we have no hesitation whatever in positively and truthfully proclaiming that in solid value to the industry which concerned it and which it concerns, no other supplement of any trade paper has equaled it. A glance at the names of the contributors, and the titles of their contributions as well, will show the truth of our proclaim, and that list, so that it may be perfectly accurate, will be published in our issue for June 28th. Those intending to order extra copies of the Semi-Centennial issue should order them at once, since it is the intention of the proprietors to limit the edition to 8,000 copies.

Newburgh (N. Y.) Boys Get Together.—Dear Journal: One of the newest of gas company employee associations has been successfully started by that veteran in the art of education and good-fellowship commingling, Mr. William R. Beal, or, as his associates fondly call him, "William R." The Employees' Association of the Newburgh Light, Heat and Power Company held its fourth monthly meeting, the evening of June 10th, and about 40 members listened to a short talk on "Illumination," by Mr. H. Thurston Owens, of New York City, and that they were interested in the subject would seem evident from the fact that the discussion which followed took quite as much time as the lecture itself. They are a studious and conscientious body of men, no less than 16 being members of the American Gas Institute, Practical Class; but they do not believe in all work and no play, for a pair of visiting "Dutch" comedians followed the serious session, and that was not all, for we had refreshments which were speedily put out of sight. I hope that the men in Poughkeepsie wont be jealous.—B.

Bureau of Information, The American Gas Institute.

Under the direction of the Institute it has been decreed: 1. That the privilege of submitting questions be limited to members of the Institute. 2. Neither the Board of Directors of this Institute, nor the Institute as a body, make themselves in any way responsible for the statements of fact or expressions of view given out by the Bureau of Information.

Bureau of Information, The American Gas Institute,
Headquarters, 1943 Commercial National Bank Building.
W. A. Baehr, Chairman. Chicago, Ills., June 14, 1909.

The Bureau of Information had Question No. 54 submitted to it. The

Official Answer to Question No. 54.

is herewith submitted:

Question No. 54.—"In the matter of gas lamps which are owned by gas companies, and are rented to consumers, are there any cases where the rental system has not proven satisfactory, or where another system has proven more satisfactory?"

In endeavoring to secure an answer to this question the Bureau of Information consulted several prominent men in the new business work of certain gas companies, and the consensus of opinion offered were to the effect that, in a very large majority of cases, the rental plan of placing arc lamps is successful; in fact, in one of the largest cities in the country, there is no incentive for a customer to purchase an arc lamp. In some cases in this city it was found that some customers did not care to use arc lamps, but who had in the past used arc lamps and desired to change to some other style of fixture. These customers were accommodated by having special devices made up such as they required, or such devices were purchased on the open market and installed for them."

EIGHTH ANNUAL CONVENTION, WISCONSIN GAS ASSOCIATION.

HELD AT THE HOTEL PFISTER, MILWAUKEE, MAY 12-13, 1909.

FIRST DAY—MORNING SESSION.

The convention was called to order Wednesday, May 12th, 1909, at 10:45 A.M., by the President, Mr. David Douglas, who said: The first order of business is the roll call. As it is considered wise by the Secretary and myself that we do not call the roll at this time, with unanimous consent it will be omitted for the present. Next in order is the reading of the minutes of the last meeting. As these have been printed and placed in the hands of every member here, the action will be the approval of the minutes as printed.

REPORT OF EXECUTIVE COMMITTEE.

The President—The next order of business is the report of the Executive Committee.

The Secretary read it as follows:

To the Members of the Wisconsin Gas Association: The following persons have made application for membership in this Association:

Active.

E. A. Beule, Sec. and Treas., Beaver Dam (Wis.) Fuel and Light Co.

Alfred W. Hulet, Asst. Supt., West Side Station, Milwaukee Gas Light Co.

R. W. Kimball, Supt., E. Wis. Railway and Light Co., Fond du Lac.

Adam Kurtz, Auditor, Milwaukee Gas Light Co.

M. O'Brien, Solicitor, Eau Claire Gas Light Co.

J. St. John, Sec. and Treas., Madison Gas and Electric Co.

Chas. Wiggins, Supt. Burner Division, Milwaukee Gas Light Co.

R. T. Gunn, Gen. Mgr., Eastern Wisconsin Railway and Light Co., Fond du Lac.

A. K. Ellis, Gen. Supt., Light, Heat and Power and Power Co., Appleton.

H. W. Johannott, Mgr., Monroe Light and Fuel Co.

W. F. Morris, Com. Agent, Milwaukee Co.

F. M. Langdon, Sales Manager, Milwaukee.

B. W. Vaughn, Representative, Laclede-Christy Clay Products Co., St. Louis, Mo.

RESIGNATIONS.

Active.—Max H. Cutcheon, Julius Linstedt, C. E. Smith, W. C. Stone, B. A. Amend, N. C. Draper, B. F. Huntington, H. H. Scott.

Associate.—J. A. Kohn, B. H. Spangenberg.

Seven active and five associate members have been dropped from the roll for non-payment of dues.

Addresses.—The following addresses or papers have been prepared for presentation at the sessions of the convention:

"Ammonia Recovery at Gas Works," by Mr. John S. Unger, Chicago.

"Display Windows and Show Rooms for Gas Companies," by Mr. G. H. Armstrong, Waukegan, Ills.

"Tar Macadam Pavements," by Mr. J. D. Taylor, Jr., Wausau, Wis.

"Quality or Price—Which?" by Mr. W. C. Heinrichs, Minneapolis, Minn.

Nominating Committee.—The following gentlemen are recommended as the Nominating Committee to select officers for the ensuing year: John Corscot, B. D. Viles, J. D. Taylor.

DAVID DOUGLAS,
WM. WALLEN,
EDWARD DANIELL, } Committee.

The report was on motion received.

The President—That disposition carries with it, of course, the election to membership and all other matters pertaining.

REPORT OF SECRETARY AND TREASURER.

The report of the Secretary and Treasurer, which showed, among other things, a total receipt of $1,067.93, an expenditure of $919.51, and a balance of $148.42, was ordered received, sanctioned and filed.

The President—Our next order is the special committees.

CONSIDERATION OF SOME SPECIAL MATTERS,

which the Secretary will present, and which we will consider in order, and he will now communicate them to the meeting.

The Secretary—In answer to a number of invitations I sent to all the Presidents and Secretaries of the sister associations, this reply I received from Mr. Alonzo P. Ewing, Secretary of the Michigan Gas Association:

HENRY H. HYDE, Secy.-Treas., Wisconsin Gas Association.—Dear Sir: Your very kind invitation to attend the eighth annual convention of Wisconsin Gas Association in Milwaukee, the 12th and 13th, is appreciated. I regret it will be impossible for me to attend.

I am sending to you, in care of the Hotel, in Milwaukee, 100 folders concerning the next meeting of the Michigan Gas Association, same as one just mailed you under separate cover. We are particularly anxious to have any gas men that are interested attend this meeting with us. It is not our intention to increase our membership by means of this trip, but to increase the fellowship among gas men.

It will be an excellent opportunity for 3 days' outing, and we are going to have, we believe, an excellent programme, part of which is on our little folder. If any of your members are interested and would like to attend, we would be glad to know about it so that we can give them full information, from time to time, in regard to the trip.

I want to thank you in advance for calling the attention of your Association to these folders, if you will. Very truly yours,

ALONZO P. EWING.

The Secretary—This means that the Michigan Gas Association is going to have its next meeting on board ship. It has chartered one of the Detroit and Cleveland steamers and proposes to take a trip from Detroit to Mackinac and return, which will be very enjoyable; the length of time, entertainment, cost, in fact everything connected with the trip, will be found described in the circular. The trip is very inexpensive.

I have a communication from the National Commercial Gas Association, which is as follows:

To the Wisconsin Gas Association, Mr. Henry H. Hyde, Sec'y-Treas.: Gentlemen—The National Commercial Gas Association, being desirous of serving in a national manner the gas industry of this country and the individual gas companies and manufacturers of appliances and supplies required for the purpose of converting gas into light, heat and power, has planned for a vast exhibition of gas apppliances and sundries at the well-known Madison Square Garden, New York city (the largest show house in the United States), the exhibition to take place from the 14th to the 21st, Sunday excluded. The exhibition will be held coincident with the 1909 convention (convention sessions of December 14, 15 and 16) of the National Commercial Gas Association, and under the exclusive control and guidance of that Association.

The members of the Wisconsin Gas Association are most cordially and earnestly invited to attend the convention and exhibition, and we extend this invitation feeling confident that those who are present will be amply repaid for the time and expense made necessary by the trip.

NATIONAL COMMERCIAL GAS ASSOCIATION,
L. S. BIGELOW, Sec'y. and Treas.

The President—Those two invitations should receive from us very pleasant consideration. The Michigan trip ought to be a very attractive one. They are our neighbors, they are very close to us. Detroit is easily reached, and it is a happy thought to get together where we will have to stay together. We will be together, and we will have a better chance to get acquainted on that trip than in any other way. Complaint has been made, with respect to meetings, especially in the larger cities, that it is impossible to keep the members together; but here when they get the crowd together they have them corralled, and they will stay together. It is a happy thought, and it will be an interesting thing to take a trip on the lakes in the month of September. Although the invitation does not state in terms, I might say that, among other interesting attractions, will be a visit to the Soo locks. The exhibition of the industries which we had last year in Chicago was a magnificent success, and was a splendid lesson to those who saw it. It was certainly a magnificent exhibit. Every year there is something new to learn, and every man who wants to keep up with the business has to know the appliances, otherwise he is only half a gas man. [Applause.]

Mr. Corscot—It would seem courteous to the parties tendering these invitations to return the thanks of the Association for the kind invitations, and to recommend to all who can find time and opportunity to attend the meetings to which we have been invited, and I make that motion. [Seconded and adopted.]

The President hereupon read his

ANNUAL ADDRESS.

To the Members of the Wisconsin Gas Association: It gives me much pleasure to have the honor of welcoming you at this our eighth annual convention At meetings of this kind we have several objects in view. Primarily, we desire to add to the knowledge we have already acquired in all matters pertaining to the gas business. We want to keep posted on everything new and progressive, and to give as well as get the results of our experiences during the past year.

It has become an important function of this Association to carefully watch the trend of all legislation affecting public utility companies in general and the gas companies in particular. It is our manifest duty to endeavor to oppose legislation which would be hurtful to our interests, and to assist in promoting legislation on right lines and to the benefit of our consumers as well as ourselves. That this Association has exercised a very efficient and wholesome influence in both of these directions is well known to many of us. I am glad to be able to say that this Association has never stood for anything that was unfair to the public. We have frankly recognized that every public service company must, in its very nature, be a public servant. It exists primarily for the public good. Its first duty is to give good service to the public, and the company that fails to give good service violates the fundamental principle of its existence.

On the other hand the public must recognize that good service cannot be obtained unless the public servants are fairly treated, that an injury done to the public service companies will surely react and become an injury to the public themselves. When it is clearly understood by the people that there is always a community of interests existing between the people and the companies, practically all of the disputes and misunderstandings which have given rise to so much friction in the past will disappear. In a rapidly improving State like Wisconsin, where every city in the State is expected to show a large percentage of increase in the census of 1910, and where the demand for the commodities of public service corporations is being required by the public in a far greater ratio than the growth of the population, there must constantly be the necessity for more capital to be invested in these businesses. If the capital is not forthcoming good service must cease, and nothing is more certain than that investments will stop going into any class of business where there is no prospect of profit or where there is doubt of the continuance of profit.

Probably the most notable fact during the past year is the small growth of the public utility business in this State. We know of several growing and prosperous cities in need of gas works, but nobody wants their franchises. There are well-established, successful gas companies in prosperous communities which, had the conditions been favorable, would have been making extensions and improvements, but are refraining from work of this kind as far as possible. The reason is plain enough. The people who have money to invest see what they think are safer and better investments than gas companies' securities. Confidence in them has been impaired, due to some cause.

I do not have knowledge of any special injury done to any gas company as yet by the workings of the Public Utilities Act at the hands of our Railroad Commission, but I hear from many quarters expression of grave apprehension of trouble, likely to arise from the exceedingly tentative valuations made by the experts of the Commission upon the physical properties of the companies. It is claimed that the estimates made by the experts of the cost of reproducing the plants to-day is much less than any responsible contractor would undertake to acquire the real estate and do the work for. If this has been done to any company, whether it is to be consummated or not, then an injury has been done to that company already, for if its property values are belittled its credit is proportionately impaired, and distrust begins. If there is one thing which the companies believe they have a right to demand before all others, and naturally to expect to be accorded to them willingly, it is that of a fair and liberal valuation of their properties.

The question of taxation has probably given rise to more disputes between the municipalities and the companies than anything else. While it is not claimed that any gas company has been assessed for more than the full cash value of all of its property, both tangible and intangible, yet I think it is true that almost without exception they pay more than their proportionate share of the taxes. It has been generally popular to "pile it onto the companies" to the limit, but there are probably some exceptions to this rule.

I have before me a list of 25 companies in this State, stating how much each paid for taxes in the year 1908. In one city the tax is less than 2 cents per 1,000 cubic feet of gas sold, and in another it is upwards of 15 cents per 1,000. No one can deny that the taxes paid by a gas company, whether much or little, become immediately a direct tax on the gas itself. The company simply becomes the agent for collecting the money from the gas consumer and placing it in the treasury of the city. If the company in this State which pays 15 cents per 1,000 cubic feet taxes had its rate cut down to 5 cents per 1,000 cubic feet it could reduce the price of gas to the consumer by 10 cents per 1,000 cubic feet and suffer no loss.

I know it has been advanced as an argument, that it does not matter to the company how much gas is taxed, the consumer must pay it; but it is neither a desirable nor a popular function for a gas company to become the collector of an excessive and extortionate tax on its own commodity. The gas company also knows that the higher price necessarily charged for gas decreases the consumption of it. And we also know that, if other commodities in competition with gas in the same market are taxed at less proportionate rates, then our business is placed at a disadvantage. The public will as a rule expect that cities of approximately the same size, and with practically the same facilities, shall have its gas supply furnished at about a like price per 1,000 cubic feet, but if there is not something like an equality in the taxes it cannot be done. It is a question for consideration whether a regular rate per 1,000 cubic feet sold should not be paid by all companies for taxes, to be determined by the State authorities. Other methods can be suggested of remedying this troublesome condition, any of which would be better than the uncertain, erratic method we have now.

During the past year we have had instructions from the Commission defining the standards of service and of our bookkeeping. I am of the opinion that it would be premature to make any criticisms on either of these at the present time. It is only fair that we should try our best to conform in every way to the requirements of the Commission. If it is found that some conditions are too onerous or unnecessarily severe, we doubtless will be relieved from such when it is so demonstrated. We should start anyhow believing that it is neither the desire nor the intention of the Commission to do any wrong to us, and if mistakes have been made they will be remedied.

It becomes my melancholy duty to report that death has again been a visitor among us, during the past year, and has removed one of our most prominent and most respected members from our midst. I refer to Mr. B. F. Ellison, Manager of the Superior (Wis.) Gas, Water and Electric Company, a gentleman whom most of us knew intimately. Deceased and I had been warm friends for upwards of 20 years. His memory will be cherished by me during my lifetime, and his name might with propriety be entitled to more than a passing mention by the members of this Association.

I beg to gratefully acknowledge the prompt and valuable assistance given to me by our Secretary, Mr. Hyde, and the other officers and members of the Executive Committee, during my year of office, and with all good wishes for the future prosperity of this Association, I now bring my remarks to an end.

The Secretary—Gentlemen, it is customary to refer the address of the President to a committee, and if that meets with your approval I will name W. E. Hazelton, W. H. Hulswit and William Jones as such committee.

(To be Continued.)

Boiler Shop Economy.

[Communicated by "ENGINEER."]

Economy is the watchword in many boiler shops and boiler rooms at the present time, although there are men who do not believe it is the part of wisdom to be too saving when it comes to boilers and their fittings; but, on the other hand, there are men who strive to economize to the extent of jeopardizing life and property. There are firemen and engineers who are wasteful, we all know; but it is best to be on the safe side after all. However, for the sake of what we can get out of it, we will observe some of the streaks of economy of certain men who have to do with boilers.

Some of the work is worth the while; some is slipshod; some is dangerous. I noticed one man who tried to save a boiler tube when the end was well gone. If he had desired to use the tube where he could cut off the weakened end it would be different; but as he had to use the full length of the tube, he simply turned down the roughened end, thereby thinning the wall to the danger point.

On the other hand, I saw some thick-walled pipes that were being saved by a boiler machinist who had been engaged for work of this

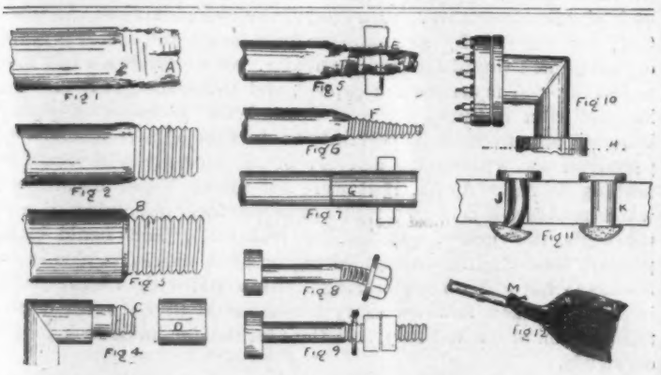
nature in a certain plant. The pipe ends were ragged and split, as at *A*, Fig. 1. The man simply turned off the broken threads, thus reducing the thickness of the wall, but left enough of the shell to cut a new end, as in Fig. 2. In another instance, the same end was obtained by turning off the broken threads to make a shoulder, as at *B*, Fig. 3, instead of coning the end down, as in Fig, 2.

I observed another party preserving the existence of certain sections of boiler piping, by re-establishing ragged and broken ends, like *C*, Fig. 4, with sleeves, like *D*. The sleeve is merely a collar with threads cut to harmonize with the threads which are almost gone at *c*, but still present ample proportions to afford a grip for the threads of the sleeve *d*. Then, with the sleeve *d* in position, a new section of piping can be turned in at the other end.

I found boiler bolts, ragged and worn, as in Fig. 5, yet saved from the junk heap by certain industrious men who went to the trouble of turning down the cone still more, thereby resulting in the tapering, threaded end, as at *F*, Fig. 6. In one shop, where a man was striving to save material along these lines, a pump rod was cut off and the worn end turned so as to admit a full, new end, like *G*, Fig. 7. This end was slotted on; then, with the new surface available, a totally new end was made by cutting threads.

In another shop where they were having a bad attack of the saving streak, the men were retaining all bent bolts, such as those shown in Fig. 8. These bolts were straightened and re-used, for someone had figured out a saving of money by this kind of economy. The practical carpenter of to-day claims that the time lost in picking up and straightening bent nails is not equal to the saving made. He claims that it is more profitable to devote this time to keeping on with the work, and he is right from several points of view.

What might be a saving under one condition might not be under



another. If there are no nails at hand it is better to stop and pick up those which were dropped, to finish the work, than to go off and get a new lot; and so on.

Fig. 9 shows a remodelled bolt. The single nut slipped, the threads being worn. By using two nuts, both nut and bolt were saved.

Fig. 10 shows a flanged piece of boiler pipe which had been cast to the junk heap. Then someone with an economical turn fished up the same and renewed the flange, which was corroded and worn, by turning the metal off on line with the dots *H*. Then the part was used with the new facing. It happened that just such a flanged joint with elbow was needed, and it happened that the workman understood how to turn down a badly deflected flange. It further happened a turning lathe with proper tools was handy there for turning the metal. Otherwise the work and bother would not have paid. A boiler plate was discarded because a number of too small in size rivets had been use. These rivets had nearly all buckled, as at *j*, Fig. 11. The head man was for throwing out the plate; but a man with the saving idea in mind went to work and removed all of the rivets. Then he rebored all the holes. Next he obtained a new assortment of rivets, with bodies of larger size and fitted them, as at *K*. This saved the boiler plate that time; but hands were skinned, tempers excited, tools broken and cuss words made while the work of cutting out the bent rivets was on.

Still, saving is saving and ought to be encouraged. Fig. 12 shows a specimen coal shovel. It was thrown aside because the rivets had pulled out of the metal plate, at *m*. A man with an eye to saving shovels not only replaced the rivet, but bound the parts with copper wire, so evenly and well that the chief engineer complimented him. The man got a reputation for economy and ingenuity right there that helped him.

Address of Welcome to the Natural Gas Association of America (Columbus, O., May 18-20, 1909), by the Hon. Judson Harmon, Governor of Ohio.

President McDowell—Gentlemen, I now call to order the Fourth Annual Meeting of the Natural Gas Association of America. I am pleased to see so many present at this opening meeting, particularly as I have the pleasure and honor of introducing to you Hon. Judson Harmon, Governor of Ohio, who will welcome you to this city. [Applause.]

Hon. Judson Harmon—Mr. President, ladies and gentlemen: As you never know in this day and age what will happen to you, I want to say, for the benefit of those who may be placed in the position I now hold, that the duties it imposes are not all pleasant. The man occupying that position often has to appear hard hearted. He often has to appear careless of the feelings of individuals where the public interests are involved, and he has to appear unduly ungracious and ungrateful when, among a number of worthy and capable men, he has to pick one and disappoint the rest; but it has many compensations with pleasant duties to be performed, one of which is that of saying a word of welcome to the various bodies which meet here in our Capital City. Its attractions are so great and its citizens are so hospitable, not only in feeling but in knowing how to entertain strangers and make them feel at home, that Columbus is getting to be more and more a convention city. [Applause.] During the 4 months I have been here, I have had a constantly passing panorama which represents the intelligent energy that made our country what it is, and carrying it and the other countries of North America with whom they are associated in their enterprises, onward still farther.

While it is a great pleasure to me, on behalf of the State and its citizens, especially those of the Capital City, to bid these organizations welcome here, yet I find a difference in my ability intelligently to perform that task. When the railroad men arrive, I feel quite at home, for I know a little about a railroad. I have been taken out of my profession twice and put in charge of crippled railroads. I know the railroad boys. I know their good qualities. I know their worth. When the lawyers come along, I feel, of course, at home among them because they are all members of my chosen profession. I have spent nearly all my life at it. I think the employment agencies will probably organize next. If they do and should call upon me to bid them welcome, I would feel perfectly at home among their representatives, by reason of my experience along that line since I have been the executive head of our State government. [Laughter and applause.] But when it comes to the representatives of the natural gas industries of America I am in an unknown field. I do not even live in a gas field. I was raised where we used to burn wood, and where one of the hardships of my boyhood was the sawing and splitting of wood and carrying it in, and where there was a double portion of work on Saturday, when I wanted to play, because it was considered a sin and wicked to saw wood on Sunday. Then, I had to carry coal. As far as lighting was concerned, my recollection goes back to the days of the tallow candle, to the days when the coal oil lamp was a new thing, and while some of these enterprising gentlemen have brought a little gas to Cincinnati, and are bringing more, and I have lived for 4 months in a place where they use it, yet I am not quite used to it. I am a little bit afraid of it. I haven't grown confident yet. But I have great admiration for the men who have so much faith in the resources of nature and in their own intelligent enterprise that they are willing to put millions of dollars in pipes in the ground with an abiding faith that nature is going to keep up her generous supply of natural gas. I am glad, therefore, to welcome you, representing, as you do, one of the new and great industries which have done so much for the comfort of people, which has done so much for the industrial activities of the country, and which I believe is yet in an early stage of its development. I would like to see you individually. I am always glad to see you as an organized body, because I do not believe any other thing has done so much for the various industries and enterprises of this country as the organizations which have been formed by almost everyone of the various industries of the country. When men work on independent lines, as they used to, each man must depend largely on the results of his own study and research; but when all of the men come together, at stated times and at a stated meeting place, then they all get the benefit of the combined knowledge and combined experience, so that, industrially speaking, they get a great advantage from it. I have always observed that when men come together with a strong, yes an irresistible, tendency to better and to improve the lot of each, the standard of all is necessarily elevated.

The best men are those who come forward as leaders; those who have shown the most ability in studying out the problems before them. Besides that, it makes all engaged in a common enterprise real comrades instead of rivals and sometimes enemies. I remember when it was that every man's hand was against every other man in the same line of business. Even the ministers used to tumble against each other, whereas now they meet every Monday and compare notes for improving the methods of bringing the gospel to the people. There is always that feature which I think about when I see the representatives of any great enterprise assembled together as you are.

I wish I knew a little about gas, but I am a "dry well," sure, on that subject. [Great laughter and applause]. I have an idea that the discovery of this mysterious product which God stored up in so many places in this country for future use has a good deal to do with many of the things we read about. The mysteries of the Oracles of olden times, the mystery of the flaming bush, and many other mysteries I believe some day we will find accounted for, not only by your discovery but by other discoveries yet to be made; for while everybody is amazed to see what progress we have made in finding out the secrets of Nature and turning them to use, I am satisfied they have only made a beginning; that we little know what the forces are, and we little know what uses to which they can be put. I believe it is well to have those engaged in developing and pushing forward a new enterprise associated together so that their action may be harmonious, so that they may be effective, so that the uses to which it is to be turned shall be those which are the best, not only for the men engaged in the enterprise, but also for the millions of people whose welfare and comfort are subserved by your work. I, therefore, bid you each and all welcome to Ohio and welcome to Columbus. You who come from other States, and you who come from our neighboring Dominion on the north, I hope will be so well treated that you will want to come back; and while I may not be here to welcome you, I shall always, when I see the accounts of your meetings in the future, remember this collection of strong and intelligent faces now spread before me, and I shall always take an interest in your enterprise as one that is destined to a great future. [Long continued applause.]

The President—Gentlemen, Mr. McMahon will reply to the gracious words of welcome so happily extended to us by Governor Harmon. He needs no introduction to this audience. I now have pleasure in presenting to you J. W. McMahon, of Toledo, O. [Applause.]

RESPONSE BY MR. J. W. MCMAHON.

Your Excellency: I have been requested, and it is my great privilege to respond, upon behalf of my fellow members, to your welcome to this convention of the Natural Gas Association of America.

Our thanks for the kind expressions of goodwill are the thanks of every individual member of the Association, and we assure you that your presence here to-day is an honor which we fully appreciate. Over two millions of the people of this great State, of which you are the worthy Executive, are dependent upon natural gas for domestic purposes; over 100,000 workmen find employment in the factories supplied with natural gas for power. Very few of the municipalities of this State but experience the benefit of this great product of Nature.

Natural gas is produced by Nature, and it is as perfect a product as comes from the earth for the use of man. It is incorruptible by a mixture with any other commodity, needs no washing, and is easily controlled by appliances perfected by the inventive mind of man. It is a perfect product as it comes from the hands of the great Creator.

This is the fourth annual meeting of this Association, the membership of which embraces almost every portion of these United States. The advantages sought by the organizers are being obtained in bringing together the financier, the engineer, the manager and the workman for exchange of ideas and experience, which are educational along the lines of prevention of waste, increased efficiency in use, and personal acquaintance. Many of the members here to-day have been closely allied with the natural gas business from its incipiency, and through their genius have made it possible to control and deliver this effective fuel to the consumers hundreds of miles from the source of supply. That they are alert, proficient and industrious, is apparent by the great strides made in the business controlled by them. Madeline Bridges furnishes a good motto for this Association, in which she said: "Give to the world the best you have, and the best will come back to you."

The history of the natural gas industry will include a history of the oil development of this country, so closely are the allied. This has heretofore been given by our worthy President of this Association. The amount of money invested in the business is great, and the number of employees are thousands; but this subject also belongs to the province of some other speaker. I am called upon simply to respond to the welcome extended us by Governor Harmon.

As Columbus is a beautiful city, as Ohio is a great State, and as Governor Harmon is an ideal executive, we are called to meet under very favorable circumstances. [Great applause]. We hope the citizens of Ohio will be as pleased with our presence as we are to be here. Again thanking your Excellency for your personal presence, and having in mind the earnest welcome accorded us,

"We will tarry awhile,
At the sign of the smile.
Forget all our griefs
In the joys that beguile.

There is always a laugh
And a shoulder to whack,
And always an echo
To answer us back.
So, let me tarry awhile
At the sign of the smile."

The Commercial Side.

[A paper read by MR. LUCIUS S. BIGELOW, of New York, at the Fourth Annual Meeting, Natural Gas Association of America.]

The natural gas industry may be indicated as divisible by three—the engineering, legal and commercial—thus forming three divisions each of vast importance. However, of the commercial we can truthfully say that it is by no means the least important, and it is of this division that I would speak in particular. Of course, it is a fact that, unless the well is drilled and capped, and unless the gas is properly handled after it leaves the well through the processes of piping, boosting, etc., there could certainly be no need of a commercial department, for without the delivery of the element there could be nothing to sell. Again, if it were not for the legal department, whose province it is to gain rights in proper form in connection with the wells, the right-of-way and the franchises, there could be no possible need of either an engineering or a commercial section in the business; but with an engineering division and with a legal section in existence, then how necessary a commercial division, for it is to that portion of the industry that the stockholder must look for his dividends.

Since the three divisions we have mentioned are indispensable, and since neither one of them could be spared from the general make-up of the industry, then certain it is that each needs be thoroughly competent to perform its function, for of what avail would be the commercial division if it were not equal to the selling task, or if, when it had secured its contracts, the validity of the franchise or of the right-of-way could not be depended upon to protect the contracts, or should the engineering department be unable to supply the element, which is, in reality, the foundation of the contract.

It would seem to me that the commercial section of the industry might also be considered as divisible by three—the gas company, the manufacturer of devices for converting gas into light, heat and power, and the merchant who handles these devices. Here, again, we have three wings of the service, each of which is of the utmost importance to the other. Without the supply of gas, which the gas company enters into contracts to supply to the meters that it provides and installs, the manufacturer of gas appliances would find absolutely no demand or sale for his manufactures, nor would the merchant find an outlet for these devices that he now purchases from the manufacturer and sells to the gas company's prospective purchasers. Again, if it were not for the manufacturer of gas appliances for the producing of light, heat and power, the gas company could not sell its element, nor could the merchant sell these wares, for without gas there would be no demand for the wares, and without the wares there would be no demand for the gas. Again, the merchant is a necessity by virtue of the fact that the manufacturer of gas appliances could not afford to have a distributing point in every city and town where natural gas is available, and, therefore, unless the merchant were on hand to stand between the manufacturer and the gas consumer, the manufacturer would be at a loss as to how he might market his wares, and the gas companies in consequence, un-

less they took up the sale of devices, would find it difficult to dispose of that God-given gift, natural gas.

One might say that, if the merchant did not handle the wares, the gas company might, and that, therefore, the merchant is least important of this commercial trio, and such a one might bring as evidence the fact that in the artificial gas field the gas companies to a very large extent handle the gas appliances in the stead of the merchant. But here let me point out that when a Mr. William Wallace Goodwin years ago imported the first gas range into the United States from England, artificial gas was being sold at a very high figure, away above its competitors, coal and wood. Therefore, and also because the gas range in those days was an unknown quantity, it became necessary for somebody to almost give gas ranges away, and to install them without cost in order to create a demand for fuel gas. It is reasonable to understand that the merchant could not be looked upon as the one to do this profitless promotive work, the only possible returns from which could be gas sold on account of the use of the appliances. Therefore, it is easy to see why, in the artificial field, gas companies, to a large extent, became and are the merchants when it comes to the matter of gas appliances. And yet, I believe the time will come when in that field there will be a large measure of co-operation between the gas company and the merchant, of which to-day there is exceedingly little; in fact, the merchant is to a very large extent an artificial gas company's competitor, in that the former uses his greatest endeavor to sell coal ranges, oil or gasoline cookers, endeavoring to persuade the prospective purchaser not to install a gas range, using various arguments to indicate that a first-class range of another type, such as is handled by the merchant, is a far better all-the-year round device, and that the cookers he handles are for the hot season all that is needed, and much less expensive than a gas range.

Doubtless many of the artificial gas companies would be greatly pleased to find a way out of this competitive selling of cooking appliances, and to secure in place thereof the utmost co-operation on the part of these present competitors, the merchants. But as yet a way has not been shown whereby this might be accomplished, because of the fact, or at least largely because of the fact, that gas ranges in the artificial field are even now sold at such ridiculously low prices as would leave the merchant little for his pains, while he makes an excellent profit on his coal and other ranges.

The natural gas field is to be congratulated upon the fact that gas ranges are found displayed not only upon the floor, but also in the show windows of an innumerable number of hardware and house furnishing stores, and if there is any natural gas company that is inclined to consider the handling of appliances in any way that would be competitive with the merchant I would sound a note of warning, for I believe that conditions are nearer ideal, though by no means wholly so, in the commercial side of the natural gas field than they are in the commercial side of the artificial enterprises.

There is a reason for the present exceedingly active work on the part of the commercial division in the various artificial gas companies, because the price of gas is still sufficiently high as to leave coal a competitor, and it is not likely that the condition will change materially, unless the diminishing of the coal supply shall increase the cost thereof, while in the natural gas field, especially in such sections of it as are remote from the coal mines and in sections where anthracite would more naturally be used than bituminous coal, the cost of gas is greatly in its own favor. However, as supply of gas may diminish sections, or on account of long distance piping or other conditions, the selling price of natural gas shall advance, then the natural gas industry could profit largely by studying the gas sales methods and gas advertising methods of the artificial gas companies. But while suggesting this, I would also suggest modifying the artificial commercial gas methods to the extent of continuing the services of the merchants as a sales' outlet for gas appliances, while at the same time adopting some of the sales promotive methods of the artificial gas companies, whereby customers are made by active work on the part of solicitors employed by the gas company and carried on their pay roll.

Personally, I like exceedingly well the method, as I understand it, that is followed by the Gas Company, at Kansas City, Mo., namely, the displaying of various types of gas appliances, but not making sales at the gas office, simply providing the floor space. Therein lies the gas company's investment, while the gas appliance maker provides the samples, which are placed symmetrically, with a neat card affixed to each device, preferably gold-lettered on a black enameled tin, stating the name of the merchant who is agent for that particular device in the city, or the names of the several dealers handling the device, in the event of there not being a single agency. This display, if kept up in clean, attractive form, being rubbed and dusted off with such frequency as to prevent any semblance of "moth and rust," might be looked upon as the gas company's show window, and as one would be referred to some certain department in a vast department store for an article displayed in the show window of that store; or, perhaps, to another far distant department, for another article displayed next to the former one in the show window, so the gas company's customers would be referred to one merchant for one article and to another for quite a different one, though the devices be displayed close to each other upon the exhibition floor.

Gas companies should be desirous of and active in hunting out and following up various fuel gas industrial equipment "prospects," such, for instance, as devices used in machine shop practice for tempering, annealing, case hardening, etc., etc. These devices do not consume as large a volume as would a steam boiler or other large unit, and, therefore, it is quite reasonable to believe that a somewhat higher charge could be made for gas consumed in shop practice than under vast boilers, and yet collectively these shop installations would consume a very large volume, which, sold at a higher rate than as boiler fuel gas, would render a larger dividend return to the gas company, or fully as large, on a lesser consumption of gas.

If such conditions do not exist, viz., a higher rate for machine shop practice than for large units, then where such may be the case, a revision of the tariff on gas ought to occur, and the company not already supplying many small manufacturing units should take active steps to increase its outlet along that line. Such devices as are termed "industrial gas appliances" would, as a rule, not be handled by merchants; therefore, the gas company would enter the field as a merchant to the extent of introducing such devices, but would in no wise thereby compete with the merchant to his discomfiture.

When it comes to the matter of industrial gas appliances, especial skill and knowledge are necessary, and in cities where many such devices may be placed it might be well for the gas company to employ a solicitor who has served a certain length of time at the factory building such fuel appliances, just as a chauffeur would spend a brief period at the factory of some certain automobile company whose type of auto he contemplated running. Such a man in the employ of the gas company would make an intelligent salesman of industrial devices, and then would be in a position to install the devices to the best possible advantage, and in turn to instruct the purchasers' employees in the use of them. The loaning of *industrial appliances* and gas engines is a matter being considered by various gas companies in the artificial field. This is a thing that some of the natural gas companies may wish to consider. I offer it merely as a thought.

Notwithstanding the fact that the sister (artificial) gas industry is much older than the natural gas enterprise, and notwithstanding the fact that for years appliances have been made on scientific principles that have been adaptable to artificial gas, the time has been very brief during which the change has come from the pipe with drilled holes, called a burner, up to the present, when we find equally efficient and equally well designed appliances for heating water, either to be connected direct with the stove boiler or to act automatically, as are found for sale in the artificial gas field. The same comparison may be made regarding elevated oven ranges, cabinet ranges, etc., and as well air heaters, to be put in rooms for taking off the chill, while in addition to these devices we find in the natural gas field to-day well designed equipment for the heating of entire residences by gas, and we find registered gas heaters installed below the floor, to heat the room through a register. The former device is practically unknown in the artificial gas field, while the latter is just showing its head in that field, and may to some extent possibly supersede the small portable heater for some types of installations.

The enormous saving in the burning of gas through the use, in the "natural" field of these better classes of devices and burners, is greatly aiding in the conserving of this natural supply, although yet there remains a tremendous waste in one and another direction, which waste may be looked upon as *destructive commercialism*, while every type of device that may be considered as a saver of gas comes under the head of *constructive commercialism*.

It behooves every corporation and individual connected with the natural gas industry to interest himself in the conserving of the element. This, as I have suggested, in the natural gas field should be looked upon as "*constructive commercialism*," for without this element the industry would be dead, and, therefore, the length of life of the industry depends upon the length of life of the supply, and since

vast sums running into the millions have been invested in the enterprise, true "*constructive commercialism*" would point to conserving rather than to wastefulness.

In view of these conditions it would seem to me that every gas company should put its heel upon the use or sale of wasteful burners and wasteful methods, and should advocate, and, so far as possible, insist upon the sale and use of economical burners and devices.

What advantage can there be in selling enormous units for a song when the same cheap element cannot be manufactured to replace an exhausted supply, the volume of which we know nothing of and the depleting of which would jeopardize or possibly ruin the industry, when a more truly commercial handling of the enterprise would dispose of the element in smaller units at higher prices, and perhaps continue the industry indefinitely without limitation, so far as length of time is concerned?

If that old saying be true, "*A penny saved is twopence earned*," then since gas is a commercial product, to be converted into cash, should we not look upon this old saying as applying to gas itself, as truthfully as to the pennies? And again, if the old saying, "*Take care of the pennies and the dollars will take care of themselves*," is true, then let us begin with a cultivating of a purpose to be economical with our gas, even in the small units, and if the old saying be true, "Save at the spigot and waste at the bung," then let us look out that while we are being economical in the small units, that we shall not find ourselves regardless when it comes to the matter of wastefulness at the bung, which represents the big units.

To define some of the other commercial features of a gas company than simply the selling of devices and of the gas itself, I would point out the necessity for polite affability on the part of meter readers and street foremen – in fact, on the part of every employee of the gas company. This certainly comes under the head of commercialism. It is a part of business promotion that the prospective buyer shall be treated politely by the prospective seller. Furthermore, money is frequently saved where damage suits might otherwise be brought by affability on the part of an employee at the critical moment, just as in a complaint department an affable clerk has it within his power to save the company many dollars of expense. Then again, the affable meter reader is in line to make many suggestions to a company's patrons leading to the added use of gas appliances in homes or factories where an observing, as well as a polite, man may discover opportunities.

I believe that the cleanly office, with clean windows and polite and attentive office employees, from the office boy up, form a great commercial card, and the value of such surroundings and employees to the company, where its patrons come to pay their bills, cannot be overestimated.

Constant supervision by the gas company (in a co-operative spirit) over the merchants of a city will prevent their handling many an inferior device that, if sold or installed, would soon give trouble, and result in many complaints to the gas company.

Cooking classes in the public schools and hospitals is a work that is being carried on by some of the artificial gas companies, and although there might seem to be far less need of this in the natural gas field than in the artificial, any such move on the part of the gas company is looked upon with favor by the community, and tends to make friends for the gas company and friendship on the part of the public is a most valuable asset.

A printed list of the many dishes that may be prepared or types of food that may be broiled or baked in a double-oven gas range, is a clever move on the part of the gas company, as it tempts the public to more generally use all parts of the range and larger and better types of gas ranges, and the better the range and the larger the range mean the greater the convenience and satisfaction to the operator and the more gas sold by the gas company. These leaflets can be given out to those who come to pay gas bills, or may be mailed or delivered with the gas bills in advance of payment. A little token of this kind *accompanying* the bill is apt to smooth the way with one who may think the bill is a little excessive.

In its broadest sense I would like to say, in conclusion, that I look upon commercialism as covering the entire operations of a gas company, in view of the fact that every department is seeking to produce one end, namely, the selling of gas, and, as one has said, "Commercialism may be defined as the adoption of profitable and legitimate means to advance business interest."

At the close of the regular paper Mr. Bigelow further remarked:

Mr. President and Gentlemen: I want to suggest something in this Association at this juncture. As has been said, the merchant is of vast importance to the natural gas industry, and I think this Association would find it to its advantage to consider very thoroughly and carefully the merchant. I think that the merchant to a large extent might become a member of this Association. I believe that a certain channel started at this time, and a flow of literature as the active work through that channel direct to the merchant, would result in a large membership in this Association. Then, although in the artificial gas field it is possible to have two very large organizations, namely, the American Gas Institute, which represents the engineering side of the National Commercial Gas Association, which represents the commercial side of that industry, we could have one large Natural Gas Association, a very important part of which would be the merchant feature of which I speak. As I say, while that is possible in the case of artificial gas, it would not be feasible under such conditions as exist in this branch of the industry. However, in the natural gas side of the industry it seems to me that if, in the meetings of this Association, a day were set apart to be known as "Commercial Day," during which only commercial topics should be presented, and during the presentation of such topics the merchant could become interested, it would result in a very large and added interest in the meetings of this Association. In that case you would bring here a large number of merchants who would be interested in the wares, some of which are now being exhibited in the auditorium adjoining us. I can see gas men here who are interested in other important features of the industry and who are not having anything to do with the various devices invented and manufactured for the purpose of converting gas into light, heat and power. But if we could present to these manufacturers the faces of a myriad of merchants interested in a common purpose, you would find these manufacturers heartily joining with us in a campaign of co-operation. You would not have to go after them at all. There is a bright future for this organization, and if it should go to some Western city for its next business meeting, as I suppose it will, that Western city will undertake to outdo what has been so successfully done here, and to accomplish that successfully, in order that it may commensurately benefit the manufacturer, you must have the merchant there to see the goods. Therefore, I would suggest for your consideration that this Association should in the future have an "Appliance Day" or a "Commercial Day," and that should add largely to the membership of this Association, the merchants of this country.

Discussion.

The President – The commercial side of the natural gas industry is of the utmost importance, for what avails a fine equipment or a large gas supply unless you get the money into the till? I would like very much, and I know it would be interesting and profitable to all of us, to have a full and free discussion of the questions touched upon in this valuable paper. Many, in fact most of you here, have had large experience along this line, and it would be greatly appreciated by all if you will individually express your views on the various questions suggested and raised by Mr. Bigelow's paper. I will first call upon Mr. Carruthers.

Mr. Carruthers - One point in the paper that does not look entirely fair to me is wherein Mr. Bigelow speaks of the gas company handling gas appliances. It strikes me forcibly that the gas company has a very much greater opportunity to meet conditions as they may exist locally or find prospective purchasers of gas appliances than the individual. While the gas company alone would not handle 40, 50 or 60 different manufacturing appliances, therefore, if they handle but one or two which, in their estimation, would give better service, yet it would be in their estimation only, because each manufacturer naturally thinks his article as good as that of the other man. Possibly it is; but if the gas company controls the situation in that one particular line it is a benefit to the business. Therefore, I would suggest, and my belief is, that the gas company should entirely keep out of the gas appliance field. The manufacturer of a special article has a representative familiar with the working and manufacture of the article, and that article brought before the people through the gas company by its representative, if the gas company controls the character of article provided, may prevent the consumer from using another article designed for the purpose which is superior to the one recommended by the gas company. For example: Take the automobile business. A number of representatives are advocating the different makes of automobiles, and, of course, as they all must have business, naturally they all think theirs is the best article. Therefore, as I look at it from that standpoint, the gas companies should have nothing to do with the gas appliance field.

The President—If anyone here differs from Mr. Carruthers on this

point we would be glad to hear from him. I am sure we would all be glad to hear from Mr. Stone, of Ashtabula, who has had recent experience along this line.

Mr. F. W. Stone—I am too small a man, and my voice too limited in its capacity, to talk before you to day. I do not believe I could make myself heard even if I had anything worth saying with regard to this subject. On the matter of gas appliances I would say, however, at Greenfield we abandoned selling appliances to the consumers, largely on account of what Mr. Bigelow stated. By so doing we found every merchant in town was a "knocker" against the gas company. They would rather sell a gasoline or coal stove than to sell gas stoves, which we wanted them to sell. At the start we sold gas appliances, but after 3 years in the natural gas business, we found it did not pay, and have gone out of it altogether. I feel, however, that the gas company should exercise some sort of supervision or act in an advisory capacity between themselves and the consumer as to what appliance should be used. I think we should have a man fully equipped with knowledge of gas appliances so that he could advise the consumer, not only with regard to the particular make of appliance, but with regard to what is best to be used from an economical standpoint, or the most économical appliance to be used under given conditions. I think we should do that. We ought to advocate strenuously the use of various gas appliances and disseminate knowledge as to the various purposes for which gas can be economically employed; but when it comes to the gas company advertising any particular make or any particalar line, or selling the article itself, I think a mistake is made when it enters that field. Mr. President, another word, I want to qualify my last statement a trifle. I believe, in the matter of furnace burners or the method of their installation and adjustment, the company should exercise the peculiar knowledge it possesses in advising the consumer what should be used and what should not be used to obtain the best economic results. The adjustment is of more importance than the kind of burner installed, although it is a good thing for the gas company to look after the kind of burner installed to insure the best results. I believe they can do so, because the gas company can afford to go back two or three times to look after a furnace burner not working, properly to adjust it and make it work economically, but the ordinary plumber or hardware man cannot afford to do so. The ordinary stove set up on the floor of the retail store is all right when it goes out of the shop, but it may not be installed in such a way in the consumer's premises as to give the best economic results. The proper course is to let the merchant handle the class of goods which will produce the best economic results, then if something demands adjustment to suit the peculiar circumstances of a given case, let the company adjust the appliance so that the consumer will be satisfied with the result by securing the most economic work from the appliance.

The President - What would you do if you knew the patron were making a bad installation by introducing a burner or equipment that, from former experience, you knew had been unsatisfactory and had resulted in its removal and gas discontinued?

Mr. Stone - It would be better policy for the company to send its representative at once to that consumer, demonstrate to him his mistake before it is too late, and show to him the appliance he is installing will not give satisfaction. It would be much better to give him timely warning than to have him use an apparatus which you knew would result in dissatisfaction in the end.

The President—I am sure we would all like to hear from Mr. McKenzie on the subject, as he has added about 10,000 installations in his city in the last two years.

Mr. McKenzie—We have given this subject of gas appliance business much thought, and have made up our minds to attempt to retain sufficient control of the gas appliance business to keep their standard up so as to insure the best satisfaction from an economic standpoint. A feature growing out of the appliance business that we will have to consider seriously is that if the gas company discontinues the handling of appliances, what means are we going to have to keep the standard of appliances up to that degree of perfection which is required in order to insure satisfaction? If we let everybody handle them and not have any supervision over them, the standard of gas appliances is liable to be lowered to that degree where dissatisfaction would follow. We have not entirely gone out of the business. We retain sufficient control of the business to keep the other fellow in line and try to prevent cheap and imperfect appliances from having general rule. Of course, we cannot do it entirely. I do not believe, however, we can allow the merchants, plumbers and other dealers to handle gas appliance goods successfully, unless we have some way of controlling the standard of the goods sold. I would like to ask all the various managers on the floor for an expression of their experience in that line.

Mr. Garard—Mr. Bigelow speaks of giving out little leaflets to the consumer. The local gas companies, with one of which I am connected, had about 50,000 tickets printed on a red card. We gave one to each of our customers. On our busy days I would go up street and find a red streak clear up to the corner, of those tickets which had been thrown away by the consumer. That is how much they appreciated our efforts to assist them. It reminded me a good deal of the travelling evangelist who went up to the old maid's door and said, "Madam, I would like to leave some tracts with you." She says, "All right, but leave them with the heels towards the house." [Laughter and applause.] That is much the way with the average consumer of natural gas. If these people get anything from the gas company they almost universally think that it's something pertaining to the meter, and they will throw it away or burn it up or otherwise get rid of it at the first opportunity. What we need more than anything else is to have these meter manufacturers become evangelists and try to revolutionize public sentiment so that we can get our customers to have some feeling of confidence in a gas meter. The average consumer now has but little faith in the honesty of a gas meter. It is very seldom you hear a gas consumer have a good word to say for the gas meter. So I say I think Brother Bigelow's leaflet business is an absolute failure. [More applause.]

Mr. Jarvis—I believe the appliance man can help out the gas company to a large degree if he will only undertake to do it. The average gas consumer will accept a statement from an outsider that he would not accept from the representative of a gas company. If the appliance man tries to convince a consumer that the company is not trying to rob him, he is much more apt to give credence to the statement than if it were made by the company. I have had more or less experience in this line in the making of installations. The consumer tried to tell me that the meter would run just the same with 3 inches of water as it does with 9 inches of water. They would not believe the gas company, but if I explained to them the workings of the meter, the latter would impress them because they would know that I was not talking simply for the purpose of selling gas regardless of its economic use, and believe if the appliance man would try to educate the consumer along that line, it would help out to a very large degree in doing away with many of the predjudices and false impressions now existing on the part of the average gas consumer. I have installed lots of appliances in Kansas City, and have tried disinterestedly to tell the consumer that the meter will run just as fast with 7 or 8 inches of water as it will with 3. I have tested it and know what it will do. I tell them I have tested it, and I have found that the consumer, knowing that I was disinterested and had experience, would take the statement from me, believing what I said, whereas he would not believe what was said by the gas company, for the consumer thinks the company never speaks unless it is for the benefit of its pocketbook.

The Secretary—We have found it a good scheme once a year to make out a yearly statement of all the bills paid during the year by the consumer, and present it to him. It shows the bill for each month, the total for the year and the average. The statements are compiled on the adding machine and I shall be glad to submit a sample so that it can be embodied in the proceedings:

The Delaware Gas Company.

Mr. JOHN SMITH .....

We beg to submit the following statement showing the amount of your gas bills for the past year, which we trust will prove interesting and satisfactory to you.

1908.	
May.	$3.24
June	0.90
July	0.90
August	0.90
September	0.90
October	1.89
November	5.40
December	8.91
1909.	
January.	7.83
February	8.37
March	8.10
April	5.67
Total.	53.01*
Average bill per month	4.41

If a man pays a big bill in the middle of the winter, he naturally thinks that represents the size of his bill for each month of the 12 months. This statement showing what the actual average is seems to have a soothing effect on his nerves and tends to establish his mental equilibrium so that he does not believe that the company is such a robber as he otherwise might think. [Applause.]

Mr. Carruthers—One thing that is used against the gas company to a very large degree is the popular expression existing with reference to the use of compressors. People have the idea, inasmuch as they are termed air compressors, that the gas companies are pumping air into the pipe lines, which is something absolutely impossible. If they are taking their gas at anything above thermal pressure, they have an idea that the company is pumping air into its pipes for and distribution through its lines. As you all know, if they did pump air into the pipe, the gas and the air would separate just the same as water will separate from oil *vice versa*. We all know it is a hard matter to make the consumer believe anything other than that he is burning air with the gas. We know though that if they had any amount of air worth considering at all, their fires or their lights would go out. Unless it is mixed just immediately before the burning point, it will separate just the same as oil and water.

The President—And you may add, Mr. Carruthers, that the one point at which all appliance men are trying to arrive, is that of the perfect mixture of air and gas.

Mr. Carruthers—Yes; which brings back to my mind the question of making thorough installation. This is a matter I think we ought to put up to the manufacturer. Every man having an appliance which amounts to anything in value should put it to the manufacturer to make that appliance work successfully and economically, or take it out.

The President—Mr. Adams, who is in the audience, has had considerable experience on this subject, having put on some 4,000 or 5,000 consumers in the last 1½ years. We would like to know what he has to say upon this very interesting subject.

Mr. Adams—A great difficulty we encounter is to have the dealer or man who handles the appliance see to it that it is properly installed and working to the best advantage. In many instances where a dealer sells a stove or any other appliance, it works very imperfectly, and we have to repair or fix it ourselves. The dealer as a rule does not know how to install the appliance which he sells; furthermore, he will not learn. An important point would be for the appliance manufacturer to educate the dealer so that he would know how to install the appliance he has for sale. The only salvation of the artificial gas man was to sell gas appliances, for if he did not sell them they would not be sold at all. If they did not undertake the handling and installing of artificial gas appliances, the electric light people would have beaten them body-and-soul. The electric light people are encroaching on the gas field more and more, in that they are putting out electric heaters, ovens, and other electrical appliances, which in many instances lead to the discontinuance of the use of gas. I know that in some instances where 15-cent gas is to be had that the electric light companies are supplying electric appliances. Of course, this should not apply with equal force when the electric light appliances are used in competition with natural gas appliances. My experience, however, is with reference to the latter is that the ordinary dealer does not know how to install them or how to make them work to the best advantage. I think the manufacturers should educate the dealers so they will know how to install and work the appliances which they sell, successfully and to the best economic advantage. When they have a complaint, they should be sufficiently educated to determine what the trouble is, and to remedy it. Another trouble is that a great many dealers in the handling of natural gas appliances assume they know it all, and the other fellow doesn't know anything; in fact they are inclined at times to be a trifle saucy, whereas smooth talk and a little salve would do a great deal of good in smoothing out many of the complaints and kicks.

The President—Mr. Rodgers, of Newark, O., has had more or less experience on this subject. We would like to hear from him.

Mr. Rodgers—The experience we have had with reference to complaints in the shortage of gas is in line with which other gentlemen have already stated. In many instances when we go to look after the cause of the alleged shortage, we find the trouble exists either in the installation or in the pipes. We have found as high as two stoves connected to ¾-pipe by a grocer or a hardware man, or other dealer who had been selling stoves. When that trouble is remedied then the customer becomes satisfied. Our experience is about on the line with the experience of others as already suggested.

The President—Mr. Bailey, what has been your experience in Bellevue, O.?

Mr. Bailey—The experience I have had leads me to the conclusion of not letting the hardware man furnish or install any appliances, except furnace burners. On going to Bellevue I made an arrangement under which we do all the fitting. We find it works very satisfactorily.

Mr. McKenzie—Mr. Kellum, of the Welsbach Company, is in the room; I would suggest he be called upon to make a few remarks in regard to the lighting end of this subject.

Mr. B. J. Kellum was then called on by the President, and said: Some features in connection with the natural gas business are not entirely clear to me. One is the disposition on the part of the company not to handle appliances. To me it looks that there should be no one any more interested in getting the proper appliance into the hands of the consumer and to have him satisfied with the use of the product than the natural gas man himself. While it is a good scheme, to my way of thinking, to encourage the local trade in handling supplies, it certainly does seem that we should at least set the example and establish the standard giving the customer the benefit of our broader experience as to the proper appliance to be used and the installation which should give him the best service. Another feature that I do not fully understand is why the sale of natural gas appliances by natural gas companies, at a profit, should not be considered a legitimate addition to their income. When all is said-and-done, you are in the business for profit, and if you can make enough additional profit out of the sale of gas appliances and supplies to pay the salary of say only one clerk in your office, it seem to me a mistake not to take advantage of the opportunity. Many merchants follow the policy of purchasing gas supplies at as low a price as possible, and selling them at as high a price as they can secure. This is not to your advantage. While I do not think, if you have merchants in your town handling proper and efficient gas appliances at a good profit, it is a good policy to antagonize and discourage them by yourself handling these appliances and selling them at cost, nevertheless it seems to me some effort should be made to discourage the practice of their handling inferior goods and selling them at high prices when you know this is going to give dissatisfaction to the consumer and so make the commodity you are selling unpopular. Another point I am not clear on is in regard to the lighting end of the natural gas business. The tendency on the part of the average natural gas company is to somewhat ignore this side of their business on account, possibly of it representing but a small proportion of their output as compared with the industrial end of the business. Now, it is possible that, in some localities, natural gas may eventually become exhausted and the installation of an artificial gas plant made necessary, in which event the lighting end of the business, which is now being ignored, will become a most important part of it. If you have not encouraged the consumer to use natural gas for lighting, and this end of your business has been allowed to run itself, a large percentage of the lighting business will leave you, which could otherwise be readily retained, if, for no other reason, than the possible contingency mentioned. I think it is obviously of the greatest advantage for any man selling a product, to get close to the man who is using it. You are not doing that when you depend solely upon the dealers in your town to handle the appliances which are used in the consumption of your product. I would be very much pleased to hear from the gentleman who spoke in favor of the gas company not handling the appliances for a reason why the sale should not be considered a legitimate and desirable source of income to the gas company, and why the gas company should not have the benefit of whatever profit there is in it?

Mr. Carruthers—The gentleman asks me to state why it would not be a legitimate business for the gas company to handle gas appliances. I do not think anybody can claim it is not a legitimate business *per se*, for there is no illegal point connected with it. The gas man has the right to handle gas appliances if he so desires, but whether the gas company, from the standpoint of good business policy, should engage in the gas appliance business is the question raised. As I said before, they are not likely to handle more than one kind of a certain appliance. They may handle that and it may be the best and the most efficient. On the other hand there might be another more efficient. If the appliance handled by the gas company were a trifle less efficient, they would naturally push that one at the expense of the other, and I doubt if 90 per cent. of the consumers would not take the word of a gas company before they would the other. They would say, "I don't know anything about it at all, and

we will depend upon you." Ninety per cent. of the people would do that, especially on a small amount of gas consumption.

Mr. Jarvis—One of the important features to watch carefully in the economic consumption of gas in a furnace is the circulation. There should be plenty of cold air to furnish circulation so that the gas goes through the furnace properly to drive the heat up where it is needed. I have frequently been called to a house to examine a furnace not working satisfactorily, and have found the thermometer 80° in the cellar and 60° upstairs. They would blame it on the furnace, whereas, there was nothing the matter with the furnace, the trouble being simply on account of circulation. Not one in 50 gas consumers knows how to start circulation properly through a furnace so as to get the best results in the way of heat throughout the house. The people in the house do not know, and never stop to find out, but simply assume that the furnace is not working right. In many instances the only trouble is a lack of cold air which is heavier and should be used to drive the hot air up into the house. If a man would tell the consumer to open up the outside air channel or open a cellar door and feed the furnace with cold air, when they start the furnace up in the morning, there would not be one-half the complaints of heating plants that we now hear. The burner may be doing its work all right and the trouble be on account of insufficient circulation.

Mr. Sears—I do not know, Mr. President, that I can speak intelligently on this matter. I may say, however, that I have been a strict advocate of the gas company handling appliances, at least to the extent of seeing that efficient appliances are procured and properly installed. I would not advocate the handling generally of appliances, thus antagonizing the dealers of the town, but as a side issue so as to see that the consumer has the opportunity of procuring the best appliance for economic use of the product sold. Of course, local conditions are just as you make them. Our experience has been very satisfactory in the West. I am inclined to think that better results can be gained by the company being interested directly in a store or appliance shop. This is especially true to towns where a large proportion of the population is composed of the laboring classes who cannot afford to go to a plumber, who in turn, cannot afford to carry very many book accounts. His capital is necessarily limited, and he is more or less handicapped in that way. A customer would be at an expense of possibly fron $40 to $70 to equip his house with the necessary appliances for the use of gas. The average laboring man cannot afford it. He has not the money to pay the cash to the plumber which the plumber would ordinarily require. The gas company, on the other hand, could stand a larger investment in these appliances, and if necessary to get the business, the company could carry the account. I am speaking now of the working class of people, who are very good customers of the company. Take for instance, railroaders. They never have any money except on pay day, but they are good gas consumers; in fact you will find very few railroaders delinquent. This is my personal view of the matter. I may be wrong, but I think I am right.

The President—Gentlemen, I am sorry to bring this discussion to a close, but we have another paper and discussion to follow at this session.

Mr. Bigelow—Before closing this discussion I would like to say a word. I am sorry Mr. Garard has gotten out—I see has gone. I wanted to say to him that if it had not been for a single missionary who went to China (at this point Mr. Garard comes in) Mr. Garard, I am glad to see you return.

Mr. Garard—Yes. I want to hear what you have to say about me. [Laughter.]

Mr. Bigelow—I will preface my remarks by saying that the value of a paper is illustrated in the same way in which you would demonstrate the value of an electric incandescent bulb. The electric current when it passes along the wire is an unseen force. It gives you no results unless it is quickened into activity and utilized by the inventive genius of man. If you put something in the way of that electric current in the form of a filament and you give resistance, the resistance brings out the light and you get the results desired. So with a paper. The paper that does not bring out discussion and the paper that does not bring out opposition, just as the filament does in the flow of the electric current, is imperfect and produces no results. Judging from the discussion following the reading of the paper, I congratulate myself that I have at least secured results. I want to say to Mr. Garard there was one missionary who went to China—Mr. Garard spoke of missionaries, so I refer to them. That missionary was thrown down and killed. What happened? Another missionary and still another went there; and, finally, just as the red marks of Mr. Garard's tickets were stretched along the street from the gas company's office to the corner, so the red blood of those missionaries marked the road to the "Open Door" in China. The sending of missionaries to China was not stopped simply because one, two or three were killed. What is the result? To-day China is open to the world. China is a great outlet for the manufacturers of the world. The gas company that will stop sending out any class of printed literature to its people, simply because some of the literature has been found upon the sidewalk, makes a great, very, very great mistake. [Applause]. I am glad to find that there are those here who agree with me on that matter. I claim that the company should not handle the appliances. Perhaps I was misunderstood. Mr. Stone suggests the installations being looked after by the company. That is absolutely necessary in a great many instances. One gentleman spoke of the manufacturer installing the appliances. If some gas appliance manufacturer in New York City would, for example, sell out in Independence, Kansas, an annealing furnace, he could not possibly afford to send a man from New York City to Independence, Kansas, to install that furnace, and yet proper installation and proper use of that device are exceedingly important to its successful working and to the success of the gas company in the further introduction of devices of the same general type. So I still believe it is of the utmost importance that the company should have a man thoroughly conversant with the various methods of the installing of gas industrial appliances. I think such must be done in order to make a success of that branch of the business. [Applause].

The President—In conclusion, one word, if I may, gathered from my own experience in the last 5 years. If the natural gas men had relied solely upon the town or city merchant to supply the equipment, and the local plumber to do the fitting, the companies for whom I speak would not have added 50,000 installations. It seems an utter impossibility to wait on the dealer for the installation of proper gas appliances. I am just giving you that as my experience. I have tried it again and again and never could make it go until the company took hold of it. Do not interfere with or tramp on the toes of the manufacturer or dealer. Help him out in every way you can, encourage him in every way you can; but at the same time make the thing go if he doesn't. That has been quite frequently necessary. Gentlemen, I am sorry we cannot continue this discussion. We have another paper to be disposed of at this session and the discussion which will necessarily follow.

On motion of the Secretary, a hearty vote of thanks was extended to Mr. Bigelow for his very interesting and instructive paper.

Mr. Maxon—Before this subject is passed I would like to get a more pronounced expression of opinion from the managers of the gas companies present as to what has been their practice in the past in this regard. It is a very interesting and highly important subject. I would like to ask that those here be called upon to indicate whether they do or do not handle this feature of the work, so that we may know whether a majority of the companies represented handle fittings and appliance work, or whether the reverse is the case. It is a subject of great interest to me and I would like to know what the majority are doing in this matter. If you would kindly call on those present to indicate by holding up their hands or by rising, we could in that way ascertain who were in the majority.

The President—I will call on the managers of companies here to indicate what their practice has been with reference to the handling of fittings and appliances for natural gas in the prosecution of their business. A great many, no doubt, handle them in the initial stages of the business, but later on got out of it. I feel myself that it is advisable, as soon as it can be safely done, to discontinue it. All those representing companies who have followed the course of handling natural gas appliances and fittings, will please raise their right hand. [Here delegates voted accordingly.] Those who have not done so will please raise the right hand. Gentlemen, we find that every one representing companies here have handled natural gas appliances and fittings as disclosed by this vote. I think you will find that is generally the experience.

The Relation of Company and Consumer.

[Read by Mr. George W. Barnes, at the Fourth Annual Meeting of the Natural Gas Association of America.]

This subject, while one of vast importance to both company and consumer, judging from what one hears of criticism and complaint at one side and action on the other, is far from being ideal in many, if not most, cases.

The subject might be dismissed with the one clause, viz.: A cordial one, where perfect harmony existed and the mutual trust that we find between the supplier and purchaser of other articles is found.

Why is it that we cannot say this, not only of the gas industry, but of any other public service corporation, for it seems all share alike in the feeling and in the friction that exists between company and consumer? We grant some notable exceptions, but only the few that prove the rule and differ only in degree. And why should it be? Do they, or should they not, bear the same relation and enjoy the same confidence in each other that is found in other lines of trade?

Let us see if we can find one cause, for there may be many. Those of you who have tried to get a franchise may know something of it.

The governing body, or the council, if you please, of a city, when asked for a franchise, or, as it appears to me, grants the privilege of furnishing gas to the city, the first aim seems to be to drive the hardest possible bargain, hedging the company about with all the restrictions and inconveniences possible. Then, not content, but must need dictate the price for which gas must be sold, this price based on some arbitrary views held, or the price of gas at some other point in no wise similar, and always the lowest to be found. Yet one may be so situated that the price paid to the other would not pay for the transportation, nor do they consider that the price of competitive fuels should in any way govern the selling price, and that the cost of solid fuels is governed very largely by the distance between the source of supply and point of consumption or cost of transportation, and the same should, and does, govern largely the cost of gas at the market; yet have you ever heard of a city council setting a price for a new coal company who asked for a charter or license to do business?

Yes, they will say; but we give the gas company the use of our streets for their pipe lines. So they do for the coal company, and it is a question which costs the city most for repairs or upkeep of streets. Again, they will say, we give you what amounts to a monopoly, as no other company will get it if you get your franchise.

Let the company try poor service and prices above that of other fuels; we can point to many cases disproving. Then there are other restrictions—free service, free gas to the city, special rates, unnecessary appliances and many other restrictions, all adding to the expense. But to the point. It is my contention that the granting of, or rather the nature of, the franchise largely determines the relation of the company and consumer. Not as you would be led to believe by the council that would grant only a close, fine-drawn set of restrictions, and as many concessions as can be squeezed out of the company.

The stockholders of a company expect dividends, and you will find that most of them, if not all, are satisfied with a nominal one, and expect no larger returns for their investment in gas stocks than any other, and they have a right to it; but if the cost of plant, selling price of gas, free gifts to the city, etc., are made features, the consumer is made to pay, if not in actual price per 1,000 for gas consumed, then in the denial by the company of many other attentions and services that he would otherwise receive, and both to his profit and comfort.

Why is it that the city councils cannot be brought to see that the best way to get ideal service from a gas company is to treat them fairly and give them the same recognition as other business men; and, as being fair-minded, allowing the laws of supply and demand to regulate all questions outside those pertaining to public safety? No; let a man be a dry goods merchant, and in that he is a straight forward business man, and there is no thought of regulation to compel him to sell at fixed prices; but if he happens to be manager of a gas company as well, then he must be restricted and governed by a city council.

What would be an ideal franchise? One where all reasonable restrictions and safeguards were exacted that made for safety to the public, and, if you please, a reasonable bond to insure the repair of streets; or, in other words, a charter, no price on gas, no free service to city or any other, put the company on a fair basis with its competitors, the coal dealers. What will you have? Fair prices, good service not only in good supply of gas, but good in all features. Your city council will say that would never do; they would rob the people. Suppose we take a look around.

The oldest natural gas company of considerable size in the country has been operating under a charter of just this kind for 25 years, and to-day is furnishing gas to practically every family within reach of its lines, all getting good service in its broad sense, a good supply of gas at all times, and with the average bill as low or lower than any other city of its size in the gas field.

Now, for the other side. We can name you a number of cities that have been franchised or legislated out of gas completely, and are now paying from three to four times the price for a gas with only two-thirds the service value. Further, we could name you several cities where the mistaken zeal of city council is withholding from the people this greatest and cheapest of all fuels. Is not the council the consumer, inasmuch as it represents them in establishing the strongest and essential relation?

Let us now go a step further, presuming we have started with a sane franchise, and work it out. First, the company should and will establish a rate that will give the cheapest fuel for the service rendered—they must to get the business. That is not all. They must bring the consumer to realize this. How? By taking an interest in him and helping him to get the very best results from each foot of gas consumed. This leads us to the ideal management, not the financial, but the departments that the consumer comes in contact with—we assume the financial end is properly managed.

First, the contracting department, as the one that the consumer meets with first. It should be so constructed that the prospective consumer leaves after signing his application with a feeling that he is doing business with a company that not only will give him value for his money but is going to trust him as a valued customer.

Next is the engineering department, where all consumers should be made to feel that that particular department was maintained for his particular benefit, as he can get advice as to cost of fuel for any or all work, the best appliance to use and how to best operate; and that the aim of the company was to help him to get the maximum service at the minimum cost. This should be particularly so in case of complaint. This department should be under a man or men who are thorough and familiar with all the details of the business, not only of the gas lines and the business of the company, but should in a broad sense be the representative of the consumer.

The consumer should, on the other hand, assume that the company is fair-minded, honest and anxious to give fair treatment to any and all consumers (which, in fact, they are), as a satisfied consumer is one of the best advertising mediums the gas company has. There are, and always will be, exceptions to both.

There are gas companies that do not try to get into the right relation with the consumer and consumers that are always knocking and complaining; but both are the exceptions, and as a rule the most satisfactory relations are found where the company and the consumer a e allowed to conduct their business on a fair basis without dictation in the form of restricting clauses and governing rules in the form of a many claused franchise.

In conclusion, we can get the ideal relation only when the gas company is recognized by the consumer and the city government as being a legitimate business concern, meeting competition on a fair basis and getting business only where they prove the advantage to be in their favor. This compels them not only to make a fair price, but to provide every means to maintain their advantage over their competitors by keeping the confidence of the consumer through the interest you expect, not only in this work, but in the economy of its use, and the consumer must consider the company in the light of helper, and not only willing but anxious to be just and fair in all its dealings.

Difficult Problems which Public Utility Commissions are Endeavoring to Solve.[1]

[By Mr. H. C. Abell, Chief Engineer, American Light and Traction Company.]

First.—"The total value of property;" which includes the physical or tangible value, as well as the so-called intangible value.

Second.—"The proper rate of return on that valuation," so that capitalists can be induced to invest in a more or less hazardous business instead of real estate, mortgages, etc.

Third.—The equitable method of charging the users of the commodity and establishing standards—whether it be for a cubic foot of gas, a kilowatt of electricity, a gallon of water, a telephone call, or a car ride, so that each user pays to the public utility for service rendered an amount which shall bear a proper relation to the cost which he occasions the utility.

Fourth.—Some method of increasing the rate of return to the public utility on its valuation in some proportion to the decreased cost to the public, as an incentive to the utility to develop its business and decrease its cost per unit, and thereby decrease its selling cost to the public.

It appears at first glance that these problems should not be difficult of solution, but an analysis soon develops the perplexing and trying difficulties.

First Problem.

Total Valuations.—Which may be divided into physical and so-called intangible valuations.

Physical Valuation.—Engineers can estimate, at prevailing prices, what it costs to replace a certain piece of apparatus, or a collection of pieces concentrated on one portion of ground or under one roof, which may be called the plant or power house, but they cannot with the same accuracy, estimate:

(a) What has been the average price paid since the utility first com-

1. "The Armour Engineer."

menced serving the public, including the increased cost of new apparatus installed when just developed, over the later prices after the apparatus becomes standard and patents have expired.

(b) What will be and what has been the cost of necessary changes, due to the ill fitting together of these parts.

(c) What will be the changes in the art during construction, necessitating changes in plans and construction.

(d) What the increased cost will be, due to climatic or labor conditions.

(e) The kind of soil and quantity of water to be encountered in all excavations.

(f) The cost of accidents, employers' liability, public liability, fire, wind, water, etc., breakage of machinery, temporary work, such as coffer dams being washed out during construction, and various other items.

(g) The increased cost of construction during operation, due to idle labor waiting for an opportunity to work, and to temporary work installed (in order to avoid interruptions to service) which is removed after permanent work is finished.

(h) The increased operating expenses, which are unavoidably due to construction work going on.

(i) The length of time necessary to construct a plant, which would affect interest while building, taxes during construction, engineering, etc.

(j) The cost of obtaining all the actual necessary money to build the plant, and to put it on a self-sustaining basis.

(k) The unforseen litigation, injunction, etc., which frequently increase enormously the original estimated cost.

(l) The cost of the corporate organization of the company.

(m) What the actual cost will be over the estimated cost—due to increased cost of material and labor since estimates were made, and to commissions, etc.

(n) The necessity of laying out works, purchasing property, erecting buildings, etc., in order to provide for future extensions—at a minimum cost for the future.

(o) The present value of the plant, after depreciating the various items to allow for obsolescence, inadequacy and decay, and the enhanced value, which will be considered under intangible valuation.

Intangible Valuation.—It is also impossible for engineers to estimate, with accuracy, the intangible valuation, which involves a consideration of—

(a) The expense of obtaining a proper and efficient operating organization.

(b) The expense of maintaining an operating organization to develop business and to popularize the utility and the use of its product during the construction period, so that the plant can commence operating with the greatest possible revenue.

(c) The cost of advertising—including newspapers, posters, periodicals, personal solicitation and practical demonstrations of various kinds.

(d) The cost of appliances which are given away, or loss on their sale which includes free installation.

(e) The loss due to operation until the utility is on a paying basis.

(f) The loss in interest and profits on the investment, from the first operating period to a time when expenses and interest are earned.

(g) The enhanced value of the utility due to the increased value of its real estate, location of plant, accessibility of water, railroad facilities and sewerage, location of pipes, conduits, etc., in the streets—the latter costing much less for installation, special fittings, moving of manholes, etc., when no obstructions are met, to the extent that these items are not given full consideration in making the physical valuation.

(h) The enhanced or decreased value due to the utility while operating having assisted and participated in the loss or development of the town or city. The utility having been an active participator in the development of the city, must be entitled to at least the same recognition as any active merchant or banker, whose business, as a going concern, is worth something; and the utility is entitled to even more consideration, since it cannot pick up its pipes, conduits, and plant and move to another city. The inactive land owner is much better off than the utility in that, although he takes the same chances in the development of the city, he takes no other chances and assumes no responsibility; whereas, the utility has actively assisted in all developments, taking the many chances of loss to which only a utility is heir, including the risks involved in the work of construction, development and financiering.

(i) The loss in the change of apparatus, due to obsolescence or inadequacy, which could not be charged as an operating expense and still maintain rates which would hold the customers and permit the financing of the company for necessary changes and extensions. One of the many examples was the changing of monocyclic generators which had been installed but a short time. An example, with which the writer is familiar, is the difference between the purchase price and the price obtained after abandonment (a change having been essential), which amounted to a depreciation of 40 per cent. per annum. The utility company could not possibly maintain its rates and finance this change due to evolution and development, any more than could a manufacturing concern (which had experienced the same rapid change in the art, as had many utility companies) if it were not permitted to add a charge for the cost of experiment and development to the sale price of its commodity. In the case of the utility, it is the development of the art for more efficient and reliable service in competition with other sources of supplying heat, light, etc.

(j) The expenditures in replacing the appliances free of cost to the consumers, due to a change in the art. An example would be: A change of motors from DC. to AC. system, from one cycle to another, and that of operating voltage, necessitating the change of all lamps and appliances. All utility companies have experienced this expense, though it does not show in a replacement inventory.

The tentative method, now used by one of the Commissions, to arrive at reproduction and present physical values, is as sollows:

Reproduction Value.—Five-year averages are obtained from the various units which go to make up a whole; then the freight, estimated cost of installation and handling are added. To the sum of these items, which are supposed to make a complete whole, is added a percentage for engineering, interest while building and incidentals. To the above two items is added the stock (coal, appliances, etc., on hand), and to this the cost of paving, making a grand total for replacement. The following is a summary:

	Reproduction.	Present.
1. Land	—	—
2. Distribution system	—	—
3. Power plant equipment	—	—
4. Buildings	—	—
5. Office furniture, appliances	—	—
6. Tools, implements and machinery	—	—
7. Horses, wagons and miscellaneous	—	—
8. Total items 1 to 7	—	—
8. Add—per cent. for engineering supervision, interest during construction and contingencies	—	—
Total 1 to 8	—	—
9. Stores and supplies	—	—
10. Paving	—	—
Total items 1 to 10	—	—

Present Value.—The present value is arrived at as follows: By consultation, discussion and investigation, a tentative life of each unit is taken; then the junk value is ascertained from values of old copper, iron, etc.; by deducting the junk value from the reproduction value, the depreciating value of the unit is obtained. The present value, if in first-class operating condition, is obtained by taking the age of the unit and deducting the amount which would have accumulated in a reserve fund had an amount been set aside each year, bearing a certain per cent. interest, which would, at the end of its life, have equaled the total depreciating value; its junk value is then added. If in fair operating condition, 10 per cent. is deducted from the present depreciating value and, if operating, but in poor condition, 20 per cent. is deducted from its present depreciating value; to either of the above values would be added the junk value. To illustrate this method of arriving at present value, we may assume that the reserve fund is to be set aside at 4 per cent. compound interest; that the cost of the unit is $1,200 new; that the tentative average life is 20 years; and that the junk value is $200, and that we wish to determine the value at the end of 10 years; first, when in first-class condition; second, when in fair condition; and third, when operating but in poor condition. Deducting $200 junk value leaves $1,000 as the cost of the depreciable portion of the unit new. The amount to be set aside each year at 4 per cent., compound interest, to equal $1,000 at the end of 20 years, would be $33.58. The amount set aside each year for 10 years, together with its accumulated interest, would be $403.

Deducting $403 from $1,000 leaves $597, to which must be added the junk value, $200, making a present value of the unit, if in good operat-

ing condition, of $797; if in fair operating condition, 10 per cent. is deducted from $597, making the total present value $737.30; if operating but in poor condition, 20 per cent. is deducted from $597, making the present value $677.60.

Minimum service values are allowed for the various units which, from point of age, might make the value of the unit equivalent to junk only, though it would be in useful operation. For instance, electric meters, which are subject to State or municipal inspection, or both, and have to be kept in a certain state of repair at all times, are allowed a minimum service value of 80 per cent. of the reproduction cost; whereas, with a steam engine that has been in service a number of years, but which may be in a good state of repair though not having the same efficiency as a more modern engine, or sufficiently good to be put in a newly built plant, only 25 per cent. of its reproduction value is allowed.

There is a great diversity of opinion among engineers as to the approximate correctness of the above method of arriving at present value.

Some engineers claim that each unit should be gone over, first, obtaining its reproduction value, and then depreciating it in proportion to the cost of making the unit practically new. Other engineers think that, in addition to the above, a further amount should be deducted for depreciation in proportion to the change in the art.

Still others think that the present value of a plant should be estimated on a basis relative to most modern apparatus. As an example: Suppose it is the desire to obtain the value of a water power plant of 1,000 kw. capacity, with a load factor of 40 per cent. A figure would first be obtained for the most economical steam plant of this capacity, which, for illustrative purposes, we will assume to cost $100,000. Further, assuming that the cost per kw. hour is 1 cent, not including interest, and that the water power plant can develop current at 5-10c. per kw. hour on the same basis as that taken for steam, then the saving per kw. hour, by using the water power plant, would be 5-10c., or on a 40 per cent. load factor (3,504,000 kw. hours per year), the saving would be $17,530. This sum capitalized at 10 per cent. (the allowable rate of return on the investment) would make the value of the water power $175,200 more than that of the steam, or give the water power a total value of $275,000. The depreciation is assumed to be included in the operating expenses.

All the above methods are influenced by the personal equation.

(To be Continued.)

Collectedness in Making Collections.

By I. T. L.

Not long ago a friend of mine in the gas business undertook to do some collecting of accounts on a plan that differed a trifle from the usual way. The friend, whom we will call Smith, established what he pleased to call a system of debt-collection. Having seen it tried on a similar plan in certain other lines, he decided to apply the principle to gas bill collecting. Smith's plan, which involved a tour of the various gas plants of the country, would visit a city or town, go to the gas company and ask permission to see the deadhead list, the poor list, the doubtful list, the hopeless list and kindred other lists. Smith would approach the manager of the works and ask permission to undertake to collect accounts which had long since been given up as hopeless. Smith met with opposition in many of the plants, while he was listened to in others. He did not explain his system unless compelled to. Then, as a rule, he was given the authority to go ahead, with many doubts on the part of the management. Smith had considerable trouble in convincing many of the managers that it was possible to secure full, or part, payment on some of the old accounts which had been given up in the past. Having obtained the proper authority to go ahead, Smith established himself in a private corner somewhere in the office where he could go through the files to get unpaid bills. Accounts which had been turned back as unworthy by collecting agencies were taken hold of with delight. Smith had a plan in mind.

We will take one gas works as an example. Smith obtained permission to go through the so-called uncollectible accounts for years back. These accounts he carefully inspected and divided into lots. The classes were graded, all of which took time. A week passed in the grading. One grade included the accounts of people who had moved away and could not be found, and who had neglected to settle up with the gas company. There was a grade including folks who failed to answer communications; another grade included the people who had replied to communications and had pleaded poverty as an excuse for non-payment; the regular deadbeats were classified, as also were known frauds; for a good many kinds of people extract gas from the gas companies with the intention of not paying for the same, if possible to avoid doing so.

Smith got up the classifications, then started writing. He used a typewriting machine and proceeded with personal letters and in fact all sorts of letters. First, he got out the regulation dun letters, having these printed, for there were some hundreds of parties with whom to correspond. As was to be expected, hardly enough money was received in return to pay for the printing and postage. The company smiled at Smith's efforts; but Smith persevered. Smith next went at it with the typewriting machine and wrote letter after letter to the persons who owed the company. The letters were different from the common dunning letter.

Smith made a study of the character of the people who owed the company. He looked up the records and referred to the mercantile directories. Bradstreets' helped him some. Smith went so far as to visit localities to ascertain if certain persons who did not answer communications were still alive. Occasionally he found the person doing good business. Sometimes he found that the party had died. Smith persevered and, as time passed, he began pulling in an income from abandoned debts. Many of the personal letters which Smith sent out brought forth replies. One party said in his letter that he had been willing to pay the gas company, but that he did not like the character of the dunning circular which the company had mailed him a number of times. Now that a polite and business-like letter had been received, he was pleased to enclose his check for the amount. Other persons did the same. One party who had moved away explained that the printed circular had never been forwarded by the postoffice, but that the letter mail had, therefore, the party responded and paid up.

Smith received letters from numerous persons tending to indicate that the persons were touched by the plain, heart-to-heart talk of Smith in his communications. No doubt the novelty of the personal letters appealed to some. There are, as we all know, some men who cannot be made to pay a bill; but who will gladly pay to favor someone. Other men like to be coaxed; still others like the personal appeal. Some wait to get a receipt first, and others take any chance that comes along.

Smith got letters from forgotten parties that astonished the company. One man who had cheated the gas company out of a month's bill some years back had gone west, opened up a store and was doing a great business. When Smith's letter finally found this man, the man answered he was glad of the chance to pay up, and his check went forward. Of course, hundreds of letters were not answered at all. Numerous persons went out of their way to poke fun. A valentine was received by Smith representing a dunning clerk. One party threatened Smith if Smith wrote again. But Smith was not discouraged; he kept at it. Towards the end the money came in liberally and to an extent that made the scheme pay. Smith was at it 3 months, but, of course, he was able to handle the accounts of several other gas companies in surrounding towns at the same time. Smith got in several thousands of dollars in old accounts. The expense of collecting accounts of this nature is necessarily large. For instance, in making one accounnt, Smith expended $33 to collect $60, for he had to travel to the town to get a settlement with the party; but he was determined to get the pay and did.

Then the next day he collected an old account of $18 at an expense less than $1. Smith turned $2,000 or more over to the company on old and forgotten bills. He himself cleared some $400 in commissions.

Items of Interest
FROM VARIOUS LOCALITIES.

THE circular issued early this month by the proprietors of the Providence (R. I.) Gas Company announces an issue of 28,000 additional shares of stock at par ($50) per share, the revenue from which is to go to paying for the modern gas plant to be erected at Sassafras Point. The issue ($1,400,000) will be made available October 1, 1911; but four semi-annual installments will be paid, beginning October 1, 1909, to bear interest from the dates they severally become payable until October 1, 1911, when the stock itself will be issued. The stock will be available for holders of shares of record, July 1, 1909, in the proportion of 7 shares of new stock for each 5 shares owned.

A CORRESPONDENT in Los Angeles, Cal., under the signature of "Grattan," sends the following, dated the 6th inst.: "One A. J. Hoeppner, who was a resident of No. 528 East 5th street, this city, the 10th of January last, was the loser on account of a conflagration in his residence that was started by an explosion of gas. He was a boarder in the house, and his belongings were not insured. He finally decided to sue the Los Angeles Gas and Electric Company for the loss, and in his complaint inventoried some of the damaged stuff as 8 handkerchiefs, 2 night shirts, 2 ounces of perfume, a photograph of his wife and another of himself, wife and mother-in-law, right after his marriage. He inventoried the whole lot (other things than those stated above were burned) at $324, and it is puzzling to know just what values he put upon the group; that is, the picture which included the mother-in-law. Further, the difference that existed in this valuation thereof as between when it was taken and now."

THE Pennsylvania Company for Insurance on Lives and Granting Annuities, through its President, Mr. C. W. S. Packard, as Trustees of the First Mortgage, 5 per cent., Sinking Fund Bonds, issued by the Savannah (Ga.) Gas Company, asks for proposals for as many of such bonds as $19,786.20 will purchase. The bids will be received until P.M. of the 30th inst.

AT the annual meeting of the Binghamton (N. Y.) Gas Company the officers elected were: Emerson McMillin, A. P. Lathrop, George W. Dunn, J. T. Deyo, I J. Hirschman, J. W. Manier, Geo. F. O'Neil, W. G. Phelps and C. M. Stone; President, A. P. Lathrop; Vice-President, Jas. W. Manier; Secretary and General Manager, C. W.

Bennett; Treasurer, Robert U. Manier; Assistant Secretary and Treasurer, C. W. Jelleffe.

MR. FRANK D. MURPHY has been appointed Manager of the Commercial Department of the Elmira (N. Y.) Water, Light and Railway Company, and Mr. Daniel F. Harrington has been appointed Assistant Superintendent of the Company's distribution system.

MR. S. W. CUTTS has been reappointed Superintendent of the gas works at Gardiner, Me., which position he vacated about twelve-months ago in order to hold the office of City Marshall.

IN the "jingle contest" conducted by the Freeport (Ills.) Gas Company last month, 152 tries were made. The medley which received the first prize (a cabinet gas range, listed at $26.50) was "from the pen" of Mr. R. C. Smedley, and is as follows:

Said Mrs. Maloney to Mrs. Muldoon;
"How is it ye're through wid your housework so soon?
I'm out in the kitchen, a rattlin' the pans,
While ye're on the front porch, just holdin' ye're hands."
Said Mrs. Muldoon to her neighbor Maloney;
"I'll have to confess that I have somethin' on ye.
When I cooked on a coal stove I never was done,
But, now I've a gas range, my cookin' is fine,
"And we've been thinkin', my Dennis and me,
Since cookin' with gas is as cheap as can be,
When he gets his next pay check on Saturday night,
We'll put gas through the whole house and use it for light."

"AT the annual meeting of the Georgetown (D. C.) Gas Light Company, the Directors elected were those who served last year. No change was made in the executive management. The reports showed that the Company's year, all things considered, could be registered a good one. General Manager Middleton is surely up to the duties of his position.—J."

ALL the possessions of the North Penn (Pa.) Gas Company were sold at auction the 6th inst., as the result of foreclosure proceedings instituted by the Commonwealth Title Insurance and Trust Company, as Trustee under a mortgage bond issue of $225,000. The bid, on bondholder's account, was $25,000.

THE Pittsfield (Mass.) Coal Gas Company has awarded a contract for the construction of a 750,000 cubic feet capacity holder, to the Cruse-Kemper Company, of Philadelphia. It will be of the 3-lift order.

IT is said that the conferences held between the officials of the 'Frisco Railroad and the owners of the Springfield (Mo.) Gas and Electric Company early this month, have resulted in an understanding that the site of the former will shortly pass into the ownership of the latter.

THE United States Circuit Court for the District has authorized Mr. J. M. Mitchell, Receiver of the properties of the Mt. Carmel (Ills.) Gas Company, to issue bonds in the additional sum of $35,000 to complete the system and put it in operating order.

MR. ROBERT HAMILTON has been appointed Official Gas and Electric Inspector for the Winnipeg district of British America.

THE Ashland (O.) Gas and Light Company's plants are now being operated by their new purchasers, Messrs. L. L. Blake and associates. In this transfer none of the Company's real estate was included.

A CORRESPONDENT in Boston, Mass., writing under date of the 12th inst., incloses this bit of news, which is from the Boston *Courier*: "The gas output of the Boston Consolidated Gas Company for May increased 4½ per cent. compared with the corresponding month a year ago. The April output increased 9.2 per cent., which was the largest percentage of increase for any month over a year. The present consumption of gas is about 25 per cent. larger than 3 years ago, when the price was 10 cents higher. Boston Consolidated Gas Company Directors will probably increase the dividends to be declared this month, from an 8 per cent. to a 9 per cent. basis by declaring a 3 per cent., making $9 per share paid in the current fiscal year ended June 30. A 9 per cent. dividend on Boston Consolidated Gas Company stock will increase the dividend returns of the Massachusetts Gas Companies by $155,646, compared with the fiscal year ended June 30, 1908. At the present time the Boston Company is the only one of the large gas companies in the State paying less than 10 per cent. dividends. In order to pay 10 per cent. it is required under its special charter to make another cut in the price of gas to 75 cents."

THE City Gas Company, of Norfolk, Va., is making many main extensions, the total of which will represent quite an addition to its mileage. The most notable one underway is that down Seaboard avenue, South Norfolk, to and through the Cedar Grove tract in Berkley ward.

MR. ALTEN S. MILLER, who since 1902 has been General Manager of the Consolidated Gas, Electric Light and Power Company, of Baltimore, Md., has resigned that position in order to accept the Vice-Presidency and General Managership of the Union Electric Light and Power Company, of St. Louis, and the other lighting properties in that city which are controlled by the North American Company. It is said of Mr. Miller by his legion of friends that nothing prompts him more to activity and resourcefulness than a situation which is fraught with trouble. In such event and fact, Mr. Miller certainly journeys to a lighting land that fairly rocks with rancors.

THE Coalinga (Cal.) plant is well underway, Mr. W. D. Trenchitt, who has the contracts for the brick and cement construction, declares he will be waiting for the appearance of the machinery contractors, rather than that they shall be awaiting his disappearance.

THE East Pennsboro (Pa.) Illuminating Gas Company is getting ready to extend its mains to and through the outlying district of Wormleysburg.

A CORRESPONDENT in Butte, Nev., who is a stockholder in the Lincoln (Neb.) Gas and Electric Company, forwards the following under date of the 15th inst.: "Copies of the annual statement of the Board of Directors of the Lincoln (Neb.) Gas and Electric Company to the stockholders was received in this vicinity yesterday. The statement notes that in spite of the floods, which last July cut out both gas and electric plants, and the big storm in October which interrupted all electric service for several days, the year, on the whole, was prosperous one in that the gross earnings showed an increase of $11,721.42 over those of 1907. The Company has put in an additional gasholder and a new water gas set up to 600,000 cubic feet per diem capacity was installed; 13,147 feet of gas mains were laid, and 508 new services were run; 386 gas meters and 233 electric meters were put on in the year. The expenditure on construction account was $88,707.83. The financial statement of the Company shows an investment in plant account amounting to $3,705,568."

MR. H. A. FERRANDON, Secretary of the New Orleans Gas Company, has issued notice to the holders that the bond issue emitted in 1883, to run for 30 years maximum, or at the respective periods of 20 or 25 years from the date of issue, has been called for redemption. The date set is the 1st prox., and interest will cease the 30th inst.

MR. EDWARD J. BURKE, of Kansas City, Mo., has been appointed Manager of the new business division of the trading of the new Citizens Gas Company, of Indianapolis, Ind.

WE fail to see where any trouble can accrue to the Detroit City Gas Company from opposition of any sort since the Company's ordinance and charter do not expire until October 1, 1923. It is true the Mayor has power to appoint a City Gas Commission, the law for which gives it (the Commission) ample power to investigate the conditions under which the gas supply is being carried on, and to suggest remedial measures in connection therewith to the Common Council, etc.

MR. HENRY I. LEA, of Chicago, has been retained by the Fyfe-Wallace interests to prepare plans and specifications for the new gas works and distribution systems to be erected and put in service this season at Ironwood, Mich., and Hurley, Wis. Bids covering apparatus and street mains will be received by Mr. Lea at his offices in the Rookery building, Chicago.

WHAT do you think of this? When the U. G. I. Company was endeavoring to secure a larger hold on the gas supply of Philadelphia, the Philadelphia *Record* had nothing but censure to heap on and over the people in charge of the Company—it wasn't censure, in the main, it was really vituperation. Last week this is the song it sung respecting the same concern: "One of the most satisfactory services secured by the people of Philadelphia is furnished by the United Gas Improvement Company, in control of the gas works of the city. The *Record* has repeatedly had it in mind to say this; and now heartily commends the methods of the Gas Company in its dealings with the public, to the Philadelphia Rapid Transit Company. The distinguishing feature of the Gas Company management is it efficiency and its courtesy towards the public. Men who know their business are in charge of it, and men who are trained in common sense methods of dealing with gas consumers are on every part of the job. No one complains of the United Gas Improvement Company now, and most people will indorse the assertion that it is the most efficient public service corporation in Philadelphia." Well; what do you think of that?

RECENT contracts awarded to the Western Gas Construction Company, of Fort Wayne, Ind., are: A new 6-foot 6-inch water gas set for the Newport (R. I.) Company, and the contract for repairing the 6-foot set now in use there; also a 3-foot 9-inch water gas set, and a $30,000 storage holder, to rest in steel tank, for the Donegal Gas Company, Mount Joy, Pa.

THE AMERICAN GAS LIGHT JOURNAL

A. M. CALLENDER & CO.,
PROPRIETORS.

THOS. J. CUNNINGHAM,
ELBERT P. CALLENDER,
EDITORS.

MONDAY, JUNE 21, 1909.

The Market for Gas Securities.

The market for gas securities has remained steady during the week, with a slight advance in Brooklyn Union, the bid price being 139¼. Consolidated, of New York, and Peoples, of Chicago, have both gone off a couple of points.

Gas Stocks.

Quotations by George W. Close, Broker and Dealer in Gas Stocks.

16 WALL STREET, NEW YORK CITY.

JUNE 21.

☞ All communications will receive particular attention.

☞ The following quotations are based on the par value of $100 per share:

N. Y. City Companies.	*Capital.*	*Par.*	*Bid.*	*Asked.*
Consolidated Gas Co.	$73,177,000	100	141	141¼
Central Union Gas Co.—				
1st 5's, due 1972, J. & J.	3,000,000	1,000	98	101
Equitable Gas Light Co.—				
Con. 5's, due 1932, M. & S.	1,000,000	1,000	—	105
Mutual Gas Co.	3,500,000	100	155	165
New Amsterdam Gas Co.—				
1st Con. 5's, due 1948, J. & J.	11,000,000	1,000	100	101½
New York & Richmond Gas Co. (Staten Island)	1,500,000	100	37	43
1st Mtg. Gold Bds. 5 p. ct.	1,000,000	—	100	101
New York and East River—				
1st 5's, due 1944, J. & J.	3,500,000	1,000	104	107
Con. 5's, due 1945, J. & J.	1,500,000	—	97	101
Northern Union—				
1st 5's, due 1927, J. & J.	1,250,000	1,000	94	100
Standard	5,000,000	100	—	75
Preferred	5,000,000	100	70	100
1st Mtg. 5's, due 1930, M. & N.	1,500,000	1,000	100	105
The Brooklyn Union	15,000,000	1,000	139½	141½
1st Con. 5's, due 1948, M. & N.	15,000,000	—	91½	98
Yonkers	250,000	500	180	—
Out-of Town Companies.				
Bay State	50,000,000	50	1½	1¾
" Income Bonds	2,000,000	1,000	—	75
Binghampton Gas Works	450,000	100	—	65
" 1st Mtg. 5's	500,000	1,000	90	96
Boston United Gas Co.—				
1st Series S. F. Trust	7,000,000	1,000	82	85
2d " " "	3,000,000	1,000	47½	50
Buffalo City Gas Co.	5,500,000	100	5	8
Bonds, 5's	5,250,000	1,000	60	60½
Capital, Sacramento	500,000	50	—	35
Bonds (6's)	150,000	1,000	—	—
Chicago Gas Co. Guaranteed Gold Bonds	7,500,000	1,000	104	105½
Cincinnati Gas and Electric Co.	20,500,000	100	92	93
Columbus (O.) Gas Co., 1st Mortgage Bonds	1,500,000	1,000	96	99
Columbus (O.) Gas Lt. & Heating Co.	1,662,750	100	90¼	91
Preferred	2,028,500	100	78½	80
Consumers, Toronto	2,000,000	50	200	204
Consolidated, Baltimore	11,000,000	100	—	105
Mortgages, 6's	3,600,000	—	—	118
Chesapeake, 1st 6's	1,000,000	—	—	—
Equitable, 1st 6's	910,000	—	—	—
Consolidated, 1st 5's	1,490,000	—	—	112
Consolidated, Gas Co. of N. J.	1,000,000	100	15	17
Con. Mtg. 5's	980,000	1,000	92	95
Bonds	75,000	—	—	100
Denver Gas and Electric	458,000	—	102	105
Detroit City Gas Co	5,000,000	50	—	50
" Prior Lien 5's	4,619,000	1,000	97	100¼
Detroit Gas Co., 5's	981,000	1,000	75	80
Equitable Gas & Fuel Co., Chicago, Bonds	2,000,000	1,000	—	101
Essex and Hudson Gas Co.	6,500,000	—	39	40
Fort Wayne	2,000,000	—	—	—
" Bonds	2,000,000	—	55	—
Grand Rapids Gas Light Co., 1st Mtg. 5's	1,225,000	1,000	104½	105
Hartford	750,000	25	190	200
Hudson County Gas Co., of New Jersey	10,500,000	—	113	113½
" Bonds, 5's	10,500,000	—	103	103½
Indianapolis	2,000,000	—	60	70
" Bonds, 5's	2,650,000	—	104½	105
Jackson Gas Co.	250,000	50	92	—
" 1st Mtg. 5's	200,000	1,000	97	100
Kansas City Gas Light Co., of Missouri	5,000,000	100	—	96
Bonds, 1st 5's	3,322,000	1,000	102	104
Laclede Gas Co., St. Louis.	10,000,000	100	—	100
Preferred	2,500,000	100	60	90
Bonds	10,000,000	1,000	104	104½
Lafayette Gas Co., Ind.	1,000,000	100	—	60
Bonds	1,000,000	1,000	60	65
Louisville	2,570,000	50	143	145
Madison Gas and Electric Co.				
" 1st Mtg. 6's	350,000	1,000	106	108½
" 6 per cent. scrip, due 1910	100,000	25	60	80¼
Massachusetts Gas Companies, of Boston	25,000,000	100	64	64¼
Preferred	25,000,000	100	91	91¾
Montreal Gas Co., Canada	2,000,000	100	218	218¾
Nashville Gas Light Co.	1,000,000	100	110	—
Newark, N. J., Con. Gas Co.	6,000,000	—	56	58
Bonds, 6's	6,000,000	—	137	138
New Haven Gas Co.	2,000,000	25	200	—
Peoples Gas Lt. & Coke Co., Chicago	25,000,000	100	113	113¼
1st Mortgage	20,100,000	1,000	—	—
" 2d "	2,500,000	1,000	104	—
ochester Gas & Electric Co.	2,150,000	50	88	—
Preferred	2,150,000	50	118	—
Consolidated 5's	2,000,000	—	104⅜	105½
San Francisco Gas Co., Cal.	15,800,000	—	—	—
St. Joseph Gas Co.—				
1st Mtg. 5's	751,000	1,000	100	102
St. Paul Gas Light Co.	1,500,000	100	45	47
1st Mortgages, 6's	650,000	1,000	113	116
Extension, 6's	600,000	1,000	112¾	115
General Mortgage, 5's	2,465,000	1,000	90	95
Syracuse Gas Co., N. Y.	1,975,000	100	50	55
Bonds	2,047,000	1,000	100	104
Washington (D. C.) Gas Co.	2,600,000	20	338¼	340
1st Mortgage, 6's	600,000	—	—	—
Western Gas Co., Milwaukee	4,000,000	—	—	—
Wilmington (Del.) Gas Co.	600,000	50	220	—

Advertisers' Index.

GAS ENGINEERS.

Bartlett-Hayward Co., Baltimore, Md. 1149
Cruse-Kemper Co., Philadelphia, Pa. 1136
Davis & Farnum Mfg. Co., Waltham, Mass. 1148
Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
Evens & Howard Firebrick Co., St. Louis, Mo. 1144
Frank D. Moses, Trenton, N. J. 1130
Frederick J. Mayer, New York City 1129
Henry I. Lea, Chicago, Ills. 1148
H. M. Byllesby & Co., Chicago, Ills. 1148
Humphreys & Glasgow, New York City 1148
Improved Equipment Company, New York City 1130
Isbell-Porter Co., Newark, N. J. 1136
Kerr Murray Mfg. Co., Fort Wayne, Ind. 1149
Laclede-Christy Clay Products Co., St. Louis, Mo. 1134
Parker-Russell Mining and Mfg. Co., St. Louis, Mo. 1132
Quintard Iron Works, New York City 1137
The Gas Machinery Co., Cleveland, O. 1128
The United Gas Improvement Co., Philadelphia, Pa. 1143
Western Gas Construction Co., Fort Wayne, Ind. 1156
William A. Baehr, Chicago, Ills. 1128

GAS WORKS APPARATUS AND CONSTRUCTION.

Bartlett-Hayward Co., Baltimore, Md. 1149
Chamber Oven Co., Milwaukee, Wis. 1131
Connelly Iron Sponge & Governor Co., New York City. 1145
Continental Iron Works, Brooklyn, N. Y. 1146
Cruse-Kemper Co., Philadelphia, Pa. 1136
Davis & Farnum Mfg. Co., Waltham, Mass. 1148
Deily & Fowler Mfg. Co., Philadelphia, Pa. 1152
Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
Evens & Howard Firebrick Co., St. Louis, Mo. 1144
Gas Engineering Co., Trenton, N. J. 1130
Humphreys & Glasgow, New York City 1148
Improved Equipment Company, New York City 1130
Isbell-Porter Co., New York City 1136
Kerr Murray Mfg. Co., Fort Wayne, Ind. 1149
Laclede-Christy Clay Products Co., St. Louis, Mo. 1134
Lloyd Construction Co., Detroit, Mich. 1138
Quintard Iron Works Co., New York City 1137
R. D. Wood & Co., Philadelphia, Pa. 1150
Riter-Conley Mfg. Co., Pittsburgh, Pa. 1135
Stacey Mfg. Co., Cincinnati, O. 1151
The Gas Machinery Co., Cleveland, O. 1128
The United Gas Improvement Co., Philadelphia, Pa. 1143
Western Gas Construction Co., Fort Wayne, Ind. 1156

PROCESSES.

Bartlett-Hayward Co., Baltimore, Md. 1149
Chamber Oven Co., Milwaukee, Wis. 1131
Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
Humphreys & Glasgow, New York City 1148
Improved Equipment Company, New York City 1130
The Gas Machinery Co., Cleveland, O. 1128
The United Gas Improvement Co., Philadelphia, Pa. 1143
Western Gas Construction Co., Fort Wayne, Ind. 1156

SCRUBBERS AND CONDENSERS.

Bartlett-Hayward Co., Baltimore, Md. 1149
Continental Iron Works, Brooklyn, N. Y. 1146
Cruse-Kemper Co., Philadelphia, Pa. 1136
Davis & Farnum Mfg. Co., Waltham, Mass. 1148
Economical Gas Apparatus Construc. Co. Toronto, Ont. 1126
Evens & Howard Firebrick Co., St. Louis, Mo. 1144
Isbell-Porter Co., Newark, N. J. 1136
Kerr Murray Mfg. Co., Fort Wayne, Ind. 1146
Quintard Iron Works, New York City 1137
R. D. Wood & Co., Philadelphia, Pa. 1150
Riter-Conley Mfg. Co., Pittsburgh, Pa. 1135
Stacey Mfg. Co., Cincinnati, O. 1151
The Gas Machinery Co., Cleveland, O. 1128
The United Gas Improvement Co., Philadelphia, Pa. 1143
Western Gas Construction Co., Fort Wayne, Ind. 1156

PRODUCER POWER PLANTS.

Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
R. D. Wood & Co., Philadelphia, Pa. 1150

TAR AND CARBONIC ACID EXTRACTOR.

Bartlett-Hayward Co., Baltimore, Md. 1149
Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
Isbell-Porter Co., Newark, N. J. 1136
Kerr Murray Mfg. Co., Fort Wayne, Ind. 1149
Stacey Mfg. Co., Cincinnati, O. 1151
The Gas Machinery Co., Cleveland, O. 1128
The United Gas Improvement Co., Philadelphia, Pa. 1143
Western Gas Construction Co., Fort Wayne, Ind. 1156

AMMONIA CONCENTRATORS.

Bartlett-Hayward Co., Baltimore, Md. 1149
Michigan Ammonia Works, Detroit, Mich. 1138
The Gas Machinery Co., Cleveland, O. 1128
Western Gas Construction Co., Fort Wayne, Ind. 1156

GAS METERS.

American Meter Co., New York and Philadelphia. 1155
D. McDonald & Co., Albany, N. Y. 1153
Helme & McIlhenny, Philadelphia, Pa. 1155
John J. Griffin & Co., Philadelphia, Pa. 1128
Keystone Meter Co., Royersford, Pa. 1154
Maryland Meter and Mfg. Co., Baltimore, Md. 1154
Metric Metal Co., Erie, Pa. 1155
Nathaniel Tufts Meter Co., Boston, Mass. 1154
New York Improved Meter Co., New York City. 1154
Pittsburg Meter Co., East Pittsburg, Pa. 1138
Rotary Meter Co., New York City 1127
Sprague Meter Co., Bridgeport, Conn. 1158
United States Meter Co., Brooklyn, N. Y. 1155

PREPAYMENT METERS.

American Meter Co., New York and Philadelphia. 1155
D. McDonald & Co., Albany, N. Y. 1153
Helme & McIlhenny, Philadelphia, Pa. 1155
John J. Griffin & Co., Philadelphia, Pa. 1128
Keystone Meter Co., Royersford, Pa. 1154
Nathaniel Tufts Meter Co., Boston, Mass. 1154
New York Improved Meter Co. New York City. 1154
Pittsburg Meter Co., East Pittsburg, Pa. 1138
Sprague Meter Co., Bridgeport, Conn. 1158

PREPAYMENT METER ATTACHMENTS.

New York Improved Meter Co., New York City. 1154

WATER METERS.

Pittsburg Meter Co., East Pittsburg, Pa. 1138

GAS AND WATER PIPES.

Davis & Farnum Mfg. Co., Waltham, Mass. 1148
Donaldson Iron Co., Emaus, Pa. 1140
Economical Gas Apparatus Construc. Co., Toronto, Ont. 1126
R. D. Wood & Co., Philadelphia, Pa. 1150

GAS COALS.

Berwind-White Coal Mining Co., New York and Phila. 1136
Perkins Co., New York City 1136
Westmoreland Gas Coal Co., Philadelphia, Pa. 1137

GAS MAIN STOPPERS.

Safety Gas Main Stopper Co., New York City. 1137

MAIN AND SERVICE LAYING.

Sullivan Bros., Flushing, N. Y. 1127

GAS TAPPING MACHINES.

George Light, Dayton, O. 1137
H. Mueller Manufacturing Co., Decatur, Ills. 1131

CANNEL COALS.

Perkins & Co., New York City....1148

STOKING MACHINERY.

G. A. Bronder, New York City....1145
Laclede-Christy Clay Products Co., S . Louis, Mo....1134
Parker-Russell Mining and Mfg. Co., St. Louis, Mo....1133

CONVEYORS—ALL KINDS.

Bartlett-Hayward Co., Baltimore, Md....1149
Cruse-Kemper Co., Philadelphia, Pa....1136
C. W. Hunt Company, New York City....1148
Economical Gas Apparatus Construc. Co., Toronto, Ont.1126
G. A. Bronder, New York City....1135
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
The Gas Machinery Co., C veland, O....1128
Western Gas Construction Co., Fort Wayne, Ind....1156

CHARGING BARROWS & COAL WAGONS.

Davis & Farnum Mfg. Co., Waltham, Mass....1148
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
Stacey Mfg. Co., Cincinnati, O....1151

GAS ENRICHERS.

Standard Oil Co., New York City....1147

COKE CRUSHERS.

Bartlett-Hayward Co., Baltimore, Md....1149
C. M. Keller, Columbus, Ind....1147

GAS METER CONNECTIONS.

H. Mueller Manufacturing Co., Decatur, Ills....1131

GAS COCKS.

H. Mueller Manufacturing Co., Decatur, Ills....1131

GAS GAUGES.

The Bristol Co., Waterbury, Conn....1140

GAS GOVERNORS.

Chaplin-Fulton Mfg. Co., Pittsburg, Pa....1150
Connelly Iron Sponge & Governor Co., New York City.1145
Evens & Howard Firebrick Co., St. Louis, Mo....1144
Isbell-Porter Co., Newark, N. J....1136
Pittsburg Meter Co., East Pittsburg, Pa....1138
R. D. Wood & Co., Philadelphia, Pa....1150
Reynolds Gas Regulator Co., Anderson, Ind....1145

CEMENTS.

C. L. Gerould, New Castle, Pa....1144
Laclede-Christy Clay Products Co., S . Louis, Mo....1134
Strassburger Bros., Chicago, Ills....1144

RETORTS AND FIREBRICKS.

Baltimore Retort and Firebrick Co., Baltimore, Md...1144
Chamber Oven Co., Milwaukee, Wis....1131
Didier-March Co., New York City....1139
Evens & Howard Firebrick Co., St. Louis, Mo....1144
Gas Bench Construction Co., St. Louis, Mo....1137
Henry Maurer & Son, New York City....1137
Improved Equipment Company, New York City....1130
James Gardner, Jr., Co., Bolivar, Pa....1146
J. H. Gautier & Co., Jersey City, N. J....1144
Laclede-Christy Clay Products Co., St. Louis, Mo....1134
Missouri Firebrick Co., St. Louis, Mo....1144
Parker-Russell Mining and Mfg Co., St. Louis, Mo....1133

INCLINED RETORTS.

Baltimore Retort and Firebrick Co., Baltimore, Md...1144
Didier-March Co., New York City....1139
Gas Bench Construction Co., St. Louis, Mo....1137
Improved Equipment Company, New York City....1130
Laclede-Christy Clay Products Co., St. Louis, Mo....1134
Parker-Russell Mining and Mfg. Co., St. Louis, Mo...1133

VERTICAL S'S.

Connelly Iron Sponge & Gov. Co. (Drake's [Eng.] System)1145
Didier-March Co., New York City....1139
Gas Bench Construction Co., St. Louis, Mo....1137
Improved Equipment Company, New York City....1130
Laclede-Christy Clay Products Co., St. Louis, Mo....1134
Parker-Russell Mining and Mfg. Co., St. Louis, Mo...1133

REGENERATIVE FURNACES.

Baltimore Retort and Firebrick Co., Baltimore, Md..1144
Bartlett, Hayward & Co., Baltimore, Md....1149
Didier-March Co., New York City....1139
Gas Bench Construction Co., St. Louis, Mo....1137
Improved Equipment Company, New York City....1130
J. H. Gautier & Co., Jersey City, N. J....1144
Laclede-Christy Clay Products Co., St. Louis, Mo....1143
Missouri Firebrick Co., St. Louis, Mo....1144
Parker-Russell Mining and Mfg. Co., St. Louis, Mo...1133

SELF-SEALING MOUTHPIECE DOORS.

Bartlett-Hayward Co., Baltimore, Md....1149
Continental Iron Works, Brooklyn, N. Y....1150
Davis & Farnum Mfg. Co., Waltham, Mass....1148
Isbell-Porter Co., Newark, N. J....1136
Improved Equipment Company, New York City....1130
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
Parker-Russell Mining and Mfg. Co., St. Louis, Mo....1133
Quintard Iron Works, New York City....1137
R. D. Wood & Co., Philadelphia, Pa....1150
Stacey Mfg. Co., Cincinnati, O....1151
The Gas Machinery Co., Cleveland, O....1128
Western Gas Construction Co., Fort Wayne, Ind....1156

INCANDESCENT GAS LAMPS.

General Gas Light Co., Kalamazoo, Mich....1132
Welsbach Company, Gloucester, N. J....1142

BURNERS.

Wm. M. Crane Co., New York City....1134

STREET LAMPS.

Thos. T. W. Miner, New York City....1138
Welsbach Street Lighting Co., New York and Phila..1142

GAS BLAST FURNACES.

American Gas Furnace Co., New York City....1126

PURIFIERS.

Bartlett-Hayward & Co., Baltimore, Md....1149
Connelly Iron Sponge & Governor Co., New York City.1145
Cruse-Kemper Co., Philadelphia, Pa....1136
Davis & Farnum Mfg. Co., Waltham, Mass....1148
Isbell-Porter Co., Newark, N. J....1136
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
Quintard Iron Works, New York City....1137
R. D. Wood & Co., Philadelphia, Pa....1150
Stacey Mfg. Co., Cincinnati, O....1151
The United Gas Improvement Co., Philadelphia, Pa...1143
Western Gas Construction Co., Fort Wayne, Ind....1156

VALVES.

Bartlett-Hayward & Co., Baltimore, Md....1149
Continental Iron Works, Brookln, N. Y....1146
Davis & Farnum Mfg. Co., Waltham, Mass....1148
Economical Gas Apparatus Construc. Co., Toronto, Ont.1126
Isbell-Porter Co., Newark, N. J....1136
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
Ludlow Valve Manufacturing Co., Troy, N. Y....1148
R. D. Wood & Co., Philadelphia, Pa....1150
Stacey Mfg. Co., Cincinnati, O....1151
The Gas Machinery Co., Cleveland, O....1138
The P. H. & F. M. Roots Co., Connersville, Ind....1139
Western Gas Construction Co., Fort Wayne, Ind....1156

PURIFYING MATERIALS.

Connelly Iron Sponge & Governor Co., New York City1145
F. Behrend, New York City....1125
The United Gas Improvement Co., Philadelphia, Pa...1143

EXHAUSTERS.

Connelly Iron Sponge & Governor Co., New York City1145
Connersville Blower Company, Connersville, Ind....1152
Davis & Farnum Mfg. Co., Waltham, Mass....1148
Isbell-Porter Company, Newark, N. J....1136
Kerr Murray Mfg. Co., Fort Wayne, Ind....1149
Piqua Blower Co., Piqua, O....1137
The P. H. & F. M. Roots Co., Connersville, Ind....1139

HIGH PRESSURE GAS GOODS.

H. Mueller Manufacturing Co., Decatur, Ills....1131

PURIFIER AND SCRUBBER TRAYS.

Bartlett-Hayward Co., Baltimore, Md....1149
Cabot Mfg. Co., Hoboken, N. J....1147
Western Gas Construction Co., Fort Wayne, Ind....1156

(*Continued on page 1126.*)

DIVIDEND NOTICE.

OFFICE OF THE UNITED GAS IMPROVEMENT CO., N. W. CORNER BROAD AND ARCH STS., PHILADELPHIA, PA., June 9, 1909.

The Directors have this day declared a quarterly dividend of 2 per cent. (one dollar per share), payable July 15th, 1909, to stockholders of record at the close of business, June 30, 1909. Checks will be mailed.

1775-5 LEWIS LILLIE, Treasurer.

Position Wanted

As Superintendent,

By a competent gas man who has had practical experience in all branches of the business, both coal and water gas. At present employed. A-1 references.

1755-tf Address, "R. C.," care this Journal.

Position Wanted.

Married man, 30 years of age, 16 years' experience in office work and the manufacture and distribution of artificial gas, also experienced in the distribution of natural gas, desires position as superintendent of gas company. Middle or Western States preferred. Address, "SUPT.,"

1775-2 Care this Journal.

Position Wanted

By Works Foreman.

Sixteen years' practical experience in the manufacture of water and coal gas and distribution of same, both high and low pressure. At present employed on gas construction work. Want to make a change. Am married. Free on July 1, 1909. Address, "Y.,"

1775-3 Care this Journal.

Situation Wanted.

An experienced business manager of Eastern gas company would like new location in the South or Middle West.

1775-2 Address, "J.," care this Journal.

Position Wanted.

Do you need a man who knows the gas business from one end to the other? If so,

1775-2 Address, "P. P.," care this Journal.

WANTED.

POSITION AS SUPERINTENDENT.

Salary, $1,500 per year. A-No. 1 references from present and past employees. Good reasons for making change. Address, "P. O.,"

1776-1 Care this Journal.

WANTED.

For Western territory, an aggressive and competent traveling salesman for a leading line of gas ranges and heaters. State age and experience.

Address, "MANUFACTURER,"

1767-tf Care this Journal.

WANTED,

COMPETENT DRAFTSMAN.

Must have thorough knowledge of gas bench designing. Position permanent and salary liberal for right party. State experience.

1775-tf Address, "BENCH," care this Journal.

WANTED,

Gas Solicitor with Experience,

In a new plant in city of 10,000 population, with electric competition. Salary or commission.

1775-2 Address, "VENDOR," care this Journal.

GAS PLANT WANTED.

The controlling stock interest in a gas plant in a town of 12,000 to 25,000 population, where main extensions and up-to-date business management would increase the business. Correspondence will be treated confidentially. Give as much detail as consistent. Address, "CAPITAL,"

1775-3 Care this Journal.

WANTED,

One Second-Hand Steel Tank Gasholder.

Capacity, 50,000 to 100,000 feet. Must be in good condition. State size, price and where same may be inspected.

1776-2 Address, "GAS," care this Journal.

FOR SALE,

One set of 4 purifying boxes 12 feet 8 inches by 10 feet 9 inches by 3 feet, in good condition, with centerseal and 10-inch connections. Also one American 8-foot station meter.

1771-tf YORK GAS CO., York, Pa.

Celebrated Lux Gas Purifying Mass

Will Save 50 Per Cent. Labor.

Used in the Gas Works of Berlin, Kiel, Frankfort, Vienna, Amsterdam, Antwerp, London, Edinburgh, Copenhagen, Madrid, Seville, Barcelona, Rio de Janeiro and others. :: :: ::

Sole Importer, F. BEHREND,

54 Front St., New York.

(Concluded from page 1125.)

PIPE LINE TOOLS.

H. Mueller Manufacturing Co., Decatur, Ills.....1131

GAS PLANT TOOLS.

H. Mueller Manufacturing Co., Decatur, Ills.....1131

GAS STOVES.

American Meter Co., New York and Philadelphia.....1141
Keystone Meter Co., Royersford, Pa.....1154
Maryland Meter & Manufacturing Co., Baltimore, Md...1154
Nathaniel Tufts Meter Co., Boston, Mass.....1154

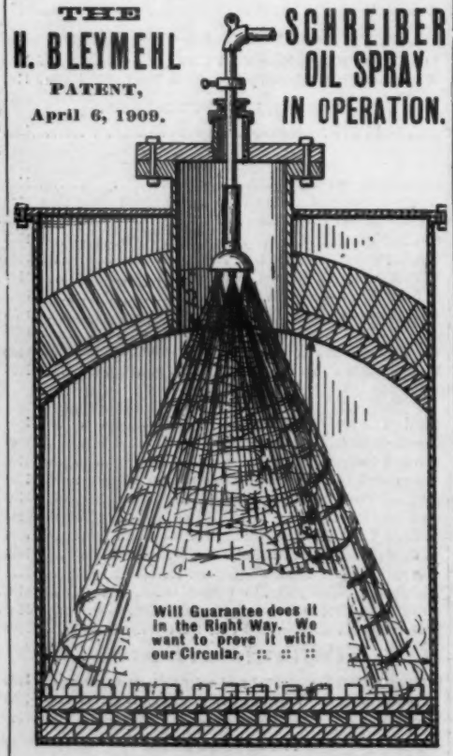
Utilize Your Gas Liquor.
NO EXTRA LABOR OR OPERATING EXPENSES.
IMPROVED AMMONIA CONCENTRATOR.
About 100 in use. Write to
STROH & OSIUS, Patentees, or
MICHIGAN AMMONIA WORKS, - Detroit, Mich.

WILLIAM A. BAEHR,
CONSULTING ENGINEER,
Commercial National Bank Building,
CHICAGO.
Also Representing
The Bartlett-Hayward Company.

HOT WATER HEATERS.

Humphrey Co., Kalamazoo, Mich.....1138

THE H. BLEYMEHL PATENT, April 6, 1909.
SCHREIBER OIL SPRAY IN OPERATION.



HENRY BLEYMEHL,
5517 Laflin Street, Chicago, Ills.

GASHOLDERS.

Bartlett-Hayward Co., Baltimore, Md.....1149
Continental Iron Works, Brooklyn, N. Y.....1146
Cruse-Kemper Co., Philadelphia, Pa.....1136
Davis & Farnum Mfg. Co., Waltham, Mass.....1138
Deily & Fowler Mfg. Co., Philadelphia, Pa.....1152
Economical Gas Apparatus Construc. Co., Toronto, Ont.1136
Kerr Murray Mfg. Co., Fort Wayne, Ind.....1149
R. D. Wood & Co., Philadelphia, Pa.....1150
Riter-Conley Mfg. Co., Pittsburgh, Pa.....1135
Stacey Mfg. Co., Cincinnati, O.....1151
Western Gas Construction Co., Fort Wayne, Ind.....1136

STORAGE TANKS.

Bartlett-Hayward Co., Baltimore, Md.....1149
Davis & Farnum Mfg. Co., Waltham, Mass.....1148
Quintard Iron Works, New York City.....1137
Stacey Mfg. Co., Cincinnati, O.....1151
Western Gas Construction Co., Fort Wayne, Ind.....1136

PATENTS, TRADE-MARKS, COPYRIGHTS.

Royal E. Burnham, Washington, D. C.....1147

THE ECONOMICAL GAS APPARATUS CONSTRUCTION COMPANY, LIMITED,
Consulting Engineers.
Builders of UP-TO-DATE Machinery and Appliances for Coal and Water Gas Plants. :: :: :: :: ::
PLANS, SPECIFICATIONS AND ESTIMATES PREPARED.
AMERICAN OFFICE:
269 Front St., East, Toronto, Canada.

GAS BLAST FURNACES
—AND—
HEATING MACHINES
—FOR—
INDUSTRIAL PURPOSES.
STATE
AMOUNT
SIZE .... OF
KIND ...
WORK TO BE DONE IN GIVEN TIME.
AMERICAN GAS FURNACE COMPANY,
24 JOHN STREET, ... NEW YORK, N. Y.
CATALOGUE SENT ON APPLICATION.

Scene on Ward S. S. Line Pier, New York, when a 250,000 cu. ft. per hour

ROTARY STATION METER

was loaded on board S. S. Havana for delivery to **Compania de Gaz y Electricidad, Habana, Cuba.** We can ship by water and rail—freight or express—it's all the same to us so long as the customer gets the goods.

It is time to stop "guessing"—some dignify it by calling it "estimating"—the results obtained in a gas works. Put in a Rotary Station Meter and know what is doing. Rotary Meters are annually saving their cost in scores of gas works.

ROTARY METER COMPANY

Rotary Station Meters can be supplied for any capacity between 1,500 cu. ft. per hour and 250,000, or more, cu. ft. per hour.

One-half the Cost—One-tenth the Space of Old Style Wet Meters.

When in need of Station Meters write

ROTARY METER COMPANY

Send for Catalog. **280 Broadway, NEW YORK.**

P. PLANTINGA, President W. E. STEINWEDELL, Secretary

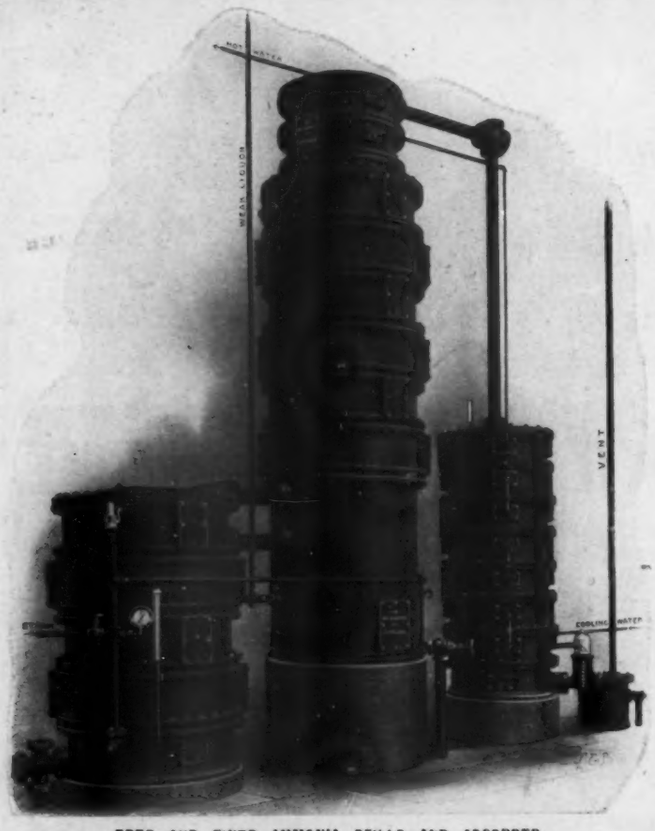
THE GAS MACHINERY CO.,

Main Office and Shops

CLEVELAND, OHIO.

NEW YORK OFFICE, - - 56 PINE STREET.

COAL AND WATER GAS APPARATUS,
EXHAUSTERS, CONDENSERS, SCRUBBERS,
TAR EXTRACTORS, WASHERS, PURIFIERS,
VALVES, CONNECTIONS,
BY PRODUCT MACHINERY,
COMPLETE GAS PLANTS.



FREE AND FIXED AMMONIA STILLS AND ABSORBER

THE GAS MACHINERY CO.
CLEVELAND, OHIO.

DIDIER-MARCH COMPANY,

Hudson Terminal Building,

WORKS:
Keasbey, Perth Amboy, N. J.

50 Church Street,
NEW YORK, N. Y.

DESSAU SYSTEM OF VERTICAL RETORTS,

"The Only System in Successful Operation."

U. S. Patent No. 904043.
"Process Patent for the Carbonization of Coal in Vertical Retorts."

U. S. Patent No. 801268.
"Operating Mechanism for Bottom Mouthpieces."

U. S. Patent No. 906187.
"Feeding Device."

U. S. Patent No. 899503.
"Retort House."

U. S. Patent No. 915156.
"Recuperation."

388 Benches, with 3984 Retorts in operation and under construction.

TOTAL DAILY PRODUCING CAPACITY, 60,000,000 CUBIC FEET.

First Installation in the United States of America,

PROVIDENCE, R. I., 12 BENCHES, 120 RETORTS,

Complete, with

Retort House, Coal and Coke Handling Machinery and Storage Bins.

HORIZONTALS AND INCLINES OF APPROVED TYPES.

Correspondence Solicited. FREDERICK J. MAYER, General Manager.

WE STOP CLINKERS.

Send for Bulletin.

WORKMANSHIP AND MATERIAL CANNOT BE EXCELLED.

IF YOU ARE SATISFIED WITH PRESENT COST OF GAS IN YOUR HOLDER WE CANNOT INTEREST YOU, BUT IF YOU ARE NOT SATISFIED, WRITE US.

NEW BENCHES—REFILLINGS.

THE IMPROVED EQUIPMENT COMPANY,

MAIN OFFICES: 60 WALL STREET, NEW YORK, N. Y.

SOLE LICENSEES FOR THE DOHERTY BENCH FUEL ECONOMIZER.

LONG DISTANCE TELEPHONE, 1503-D.

FRANK D. MOSES, President.

GAS ENGINEERING CO.,

MANUFACTURERS AND ERECTORS OF

COMPLETE GAS WORKS.

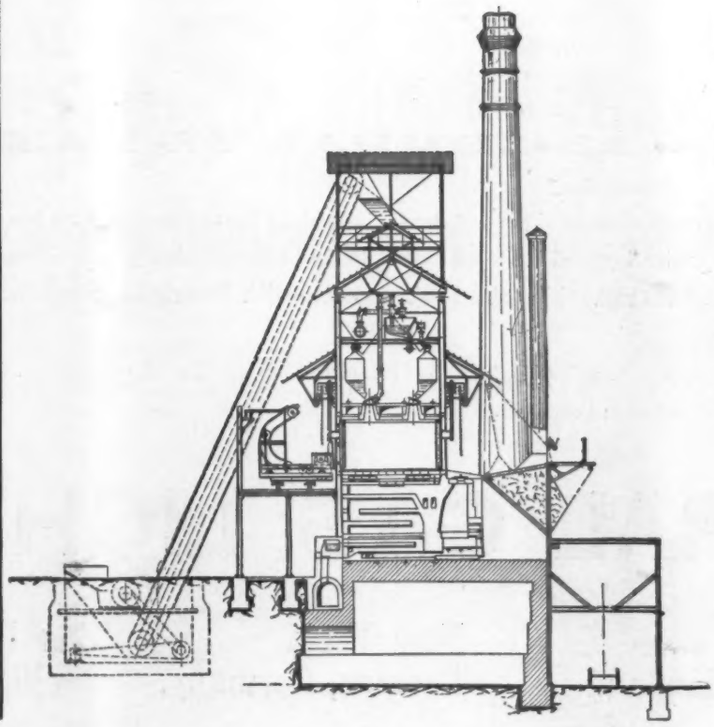
SPECIAL ATTENTION GIVEN TO LARGE PURIFIERS.

OFFICE AND WORKS, - - - - - - TRENTON, N. J.

CHAMBER OVENS.

Do You Know About Chamber Ovens?

Horizontal, Vertical, or Inclined.



If your output is over 250,000 feet per diem don't fail to consult

THE CHAMBER OVEN CO.,

405 Keene St.,

MILWAUKEE, WIS.

FRED. BREDEL, President.

WM. H. CAMPBELL, Eastern Agent,

Virginia State Insurance Building, Richmond, Va.

If there Were No Mueller Pipe Jointers

It would not make much difference how you made your joints. One way would be about as good as another, without any one of them being good enough to brag about. But THERE ARE

CLOSED. D-23350 OPEN.

Mueller Pipe Jointers.

And consequently it makes a good deal of difference how you make your joints. If you adopt the "one way as good as another" plan you are losing the advantage of a pipe jointer made of the best packing, reinforced by brass band and with clamp attached. It is always ready.

Unconditionally Guaranteed.

TRADE MARK
MUELLER
REGISTERED

H. MUELLER MFG. CO.

Works and General Offices, DECATUR, ILL., U. S. A. West Cerro Gordo St.

Eastern Division, NEW YORK, N. Y., U. S. A. 254 Canal St. (cor. Lafayette).

Chicago Branch, CHICAGO, ILL., U. S A., 37 Dearborn St.

THE HUMPHREY GAS ARC LAMP.

Designed, Developed and Distinguished as

"THE GAS COMPANY'S LAMP,"

Has been one of the most conspicuous successes of the past decade in lighting lines. The competing lamps that were brought out in scores during the earlier days had but a brief life and exist to-day principally as unpleasant memories of ill-considered purchases. **Is not the same thing about to be repeated with Inverted Gas Arc Lamps?**

Adopt the **Humphrey Inverted** as your standard and be insured and protected by the strongest, most liberal and progressive gas lighting organization in the world.

GENERAL GAS LIGHT CO.,

Kalamazoo. **New York.** **San Francisco.**
London, England **Bremen, Germany.** **Wellington, New Zealand.**

IT IS ABSOLUTELY NECESSARY

that people be reminded continually that you are ready to sell them the things they want. This is a big world, with lots of people in it, and you are easily forgotten if you don't keep buyers posted. What you should do is to tell them about your product to-day, remind them to-morrow, and keep on reminding them thereafter. If you do this, when the buyer is ready to place his order he will remember you. :: :: :: :: :: :: :: :: :: ::

An Advertisement in the AMERICAN GAS LIGHT JOURNAL

is the best and surest means of keeping your name and product before the buyers. :: ::

THE PARKER-RUSSELL MINING AND MFG. CO.,

Saint Louis, Missouri. New York Office, 45 Broadway.

GAS RETORT BENCHES OF ALL DESCRIPTIONS.

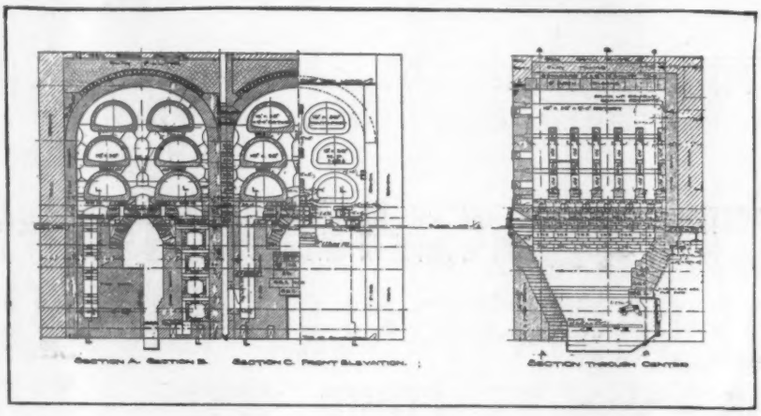
FIDDES-ALDRIDGE DISCHARGING-CHARGING MACHINES.

BEST ON THE MARKET FOR THROUGH RETORTS.

Rear Clinkering Benches have Decided Advantages and are favored by many.

No iron floor or pits required in front of furnaces.

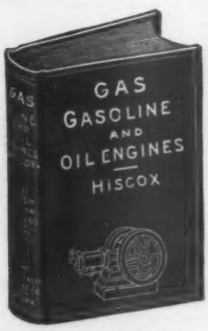
Note superiority of recuperators and design of settings.



We mine our own clay and manufacture our own retorts and other fireclay goods. We KNOW they are Good when shipped and are responsible for their quality.

Correspondence Solicited.

All Contracts Made as of St. Louis.



JUST PUBLISHED, 15TH EDITION, REVISED, ENLARGED AND RESET.

Gas, Gasoline and Oil Engines,

INCLUDING GAS PRODUCER PLANTS,

By GARDNER D. HISCOX, M.E.

Author of "MECHANICAL MOVEMENTS," "COMPRESSED AIR," Etc.

PRICE, - - - - - $2.50.

The only complete American book on the subject for Gas Engine Owners, Gas Engineers and intending purchasers of gas engines, treating fully on the construction, installation, operation and maintenance of gas, gasoline, kerosene and crude petroleum engines.

The new rewritten, enlarged and revised 15th edition of this work has been prepared to meet the increasing demand for a thorough treatise on the subject. Its 450 pages give general information for everyone interested in this popular motive power and its adaptation to the increasing demand for a cheap and easily managed motor requiring no licensed engineer. It is fully illustrated by 351 Engravings and Diagrams. For sale by

A. M. CALLENDER & CO., - - - - - 42 Pine Street, New York City.

Gas Companies' Bookkeeping,

1906 EDITION,

By JOHN H. BREARLEY and BENJAMIN TAYLOR.

A Practical Treatise on the Keeping of Gas Companies' Accounts,

WITH USEFUL

FORMS FOR GAS UNDERTAKINGS.

PRICE, CLOTH, $4.50, MOROCCO, $6.50.

FOR SALE BY

A. M. CALLENDER & CO., - - - 42 Pine Street, New York City.

GAS BENCHES,

FIRE BRICK AND WATER GAS LININGS.

LATEST DESIGNS,
HIGHEST GRADE MATERIAL,
SUPERIOR WORKMANSHIP,
UNEQUALED RESULTS.

DESIGNS AND SPECIFICATIONS FURNISHED ON THE HORIZONTAL, INCLINED OR VERTICAL RETORT SYSTEMS FOR COMPLETE GAS WORKS.

LACLEDE-CHRISTY CLAY PRODUCTS CO.,

ST. LOUIS, MO.

SCIENTIFIC BOOKS.

GAS MANUFACTURE. By W. J. A. Butterfield. Vol. I., Material and Processes. $2.50. Vol. II., In Preparation

MODERN GAS ENGINES AND PRODUCER GAS PLANTS. By R. E. Mathot. $2.50.

COAL TAR AND AMMONIA. By George Lunge. $15.

GAS ANALYSIS. By Dr. W. H. Birchmore. $1.25.

ELECTRIC GAS LIGHTING. By H. S. Norrie. 50 cents.

GAS ANALYST'S MANUAL. By J. Abady. $6.50.

GAS ENGINE DESIGN. By C. Edward Lucke, Ph.D. $3.

THE "GAS WORLD" YEAR BOOK, 1908. Edited by John Douglas. $3.

GAS AND GAS WORKS. By Hughes and O'Connor. $2.50

POOLE ON FUELS. By Herman Poole. $3.

GAS ENGINEER'S POCKET-BOOK. By Henry O'Connor $3.50.

PRACTICAL TREATISE ON HEAT. By Thomas Box. 3d edition. $5.

CHEMICAL TECHNOLOGY: Vol. I., *Fuel and Its Applications*, $5. Vol. II., *Lighting*, $4.

IRONWORK: Practical Designing of Structural Ironwork. By H. Adams. $3.50.

SELF-INSTRUCTION FOR STUDENTS IN GAS MANUFACTURE. Elementary, advanced and constructional, each, $1.50.

LIQUID FUEL FOR MECHANICAL AND INDUSTRIAL PURPOSES. By E. A. Brayley Hodgetts. $2.50.

GAS ENGINE. By F. R. Hutton, E.M., Ph.D., Sc.D. $5.

TECHNICAL GAS ANALYSIS. By Winkler & Lunge. $4.

CHEMISTRY OF GAS MANUFACTURE. By Harold M. Royle, F.C.S. $4.50.

HEMPEL'S GAS ANALYSIS. $2.25.

HANDBOOK FOR GAS ENGINEERS AND MANAGERS. Seventh edition. By Thomas Newbigging. $6.50.

GAS, GASOLINE AND OIL ENGINES. By Gardner D. Hiscox. Fifteenth edition. $2.50.

PRACTICAL HANDBOOK ON GAS ENGINES. By G. Lieckfeld. $1.

HEAT A MODE OF MOTION. By John Tyndall. $2.50.

THEORY OF HEAT. By J. Clerk-Maxwell. $1.50.

AMMONIA AND AMMONIUM COMPOUNDS. By Dr. R. Arnold. $2.

GASFITTERS' QUESTION BOOK, WITH ANSWERS. By Albert Dunbar, S.B. $1.00.

A TREATISE ON THE COMPARATIVE COMMERCIAL VALUES OF GAS COALS AND CANNELS. By D. A. Graham. $1.50.

A TEXT BOOK OF INORGANIC CHEMISTRY. By Prof. Victor Von Richter. $2.

ILLUMINATING AND HEATING GAS. By W. Burns. $1.50

HANDBOOK FOR MECHANICAL ENGINEERS. By H. Adams. $2.50.

FINANCES OF GAS, ELECTRIC LIGHT AND POWER ENTERPRISES. By Wm. D. Marks. $4.

THE "GAS WORLD" ANALYSES OF ACCOUNTS OF GAS UNDERTAKINGS FOR 1906-1907. $4.

STANDARD REDUCTION FACTORS FOR GASES. By Helon Brooks MacFarland. $1.50.

PRACTICAL PLUMBING. By P. J. Davies. Vol. I., $3. Vol. II., $4.50.

AMERICAN SANITARY PLUMBING. By James J. Lawler. $2.

HENLEY'S 20TH CENTURY BOOK OF RECIPES, FORMULAS AND PROCESSES. By Gardner D. Hiscox. $3.

TREATISE ON MASONRY CONSTRUCTION. Baker. $5.

FIELD'S ANALYSIS, 1907. $5.

AMERICAN GAS ENGINEERING PRACTICE. By M Nisbet Latta. $4.50.

A COMPARISON BETWEEN THE ENGLISH AND FRENCH METHODS OF ASCERTAINING THE ILLUMINATING POWER OF COAL GAS. $1.50.

JONES JET PHOTOMETER, for Coal or Water Gas. Each $10.

ELECTRICITY.

ELECTRIC WIRING DIAGRAMS AND SWITCHBOARDS. By Newton Harrison, E.E. $1.50.

CARE AND MANAGEMENT OF ELECTRIC POWER PLANTS. By Norman H. Schneider. Cloth, $1.50. Leather, $2.50.

INDUSTRIAL PHOTOMETRY, with Special Application of Electric Lighting. By A. Palaz, Sc.D. $4.

ELEMENTS OF ELECTRIC LIGHTING, Including Electric Generation, Measurement, Storage and Distribution. By Philip Atkinson. $1.50.

ELECTRIC TRANSMISSION OF ENERGY. By G. Kapp. $3.50.

ELECTRICIAN'S POCKET-BOOK. By Monroe and Jamieson. $2.50.

DYNAMO BUILDING. By F. W. Walker. 50 cents.

DOMESTIC ELECTRICITY FOR AMATEURS. By F. Hospitalier. $2.50.

PRACTICAL MANAGEMENT OF DYNAMOS AND MOTORS. $1.

PRACTICAL GUIDE TO THE TESTING OF INSULATED WIRES AND CABLES. $1.

ELECTRIC LIGHTING, by Francis B. Crocker. $3.

ELECTRIC LIGHT FITTING. $2.

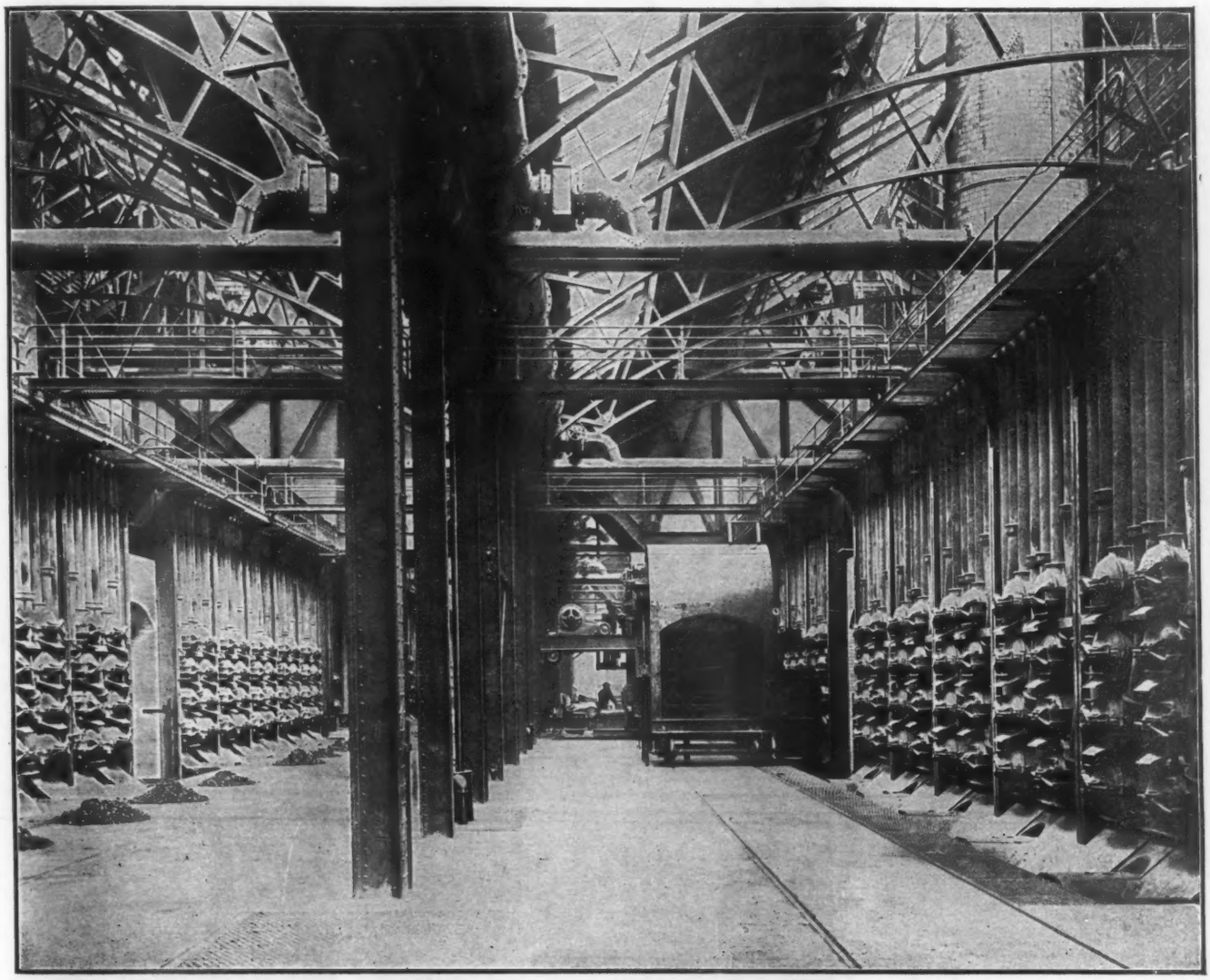
PRACTICAL ELECTRICITY. $2.50.

ELECTRICITY FOR ENGINEERS. $2.50.

ELECTRICITY, Its Theory, Sources and Applications. By John T. Sprague. $6.

The above will be forwarded upon receipt of price. If sent by mail or express, postage or express charges must be added to above prices. We take especial pains in securing and forwarding any other Works that may be desired, upon receipt of order. All remittances should be made by check, draft, or post office money order. No books sent C.O.D.

A. M. CALLENDER & CO., - - - - - 42 Pine Street, New York City.



Eleven Millions Capacity in One Retort House.

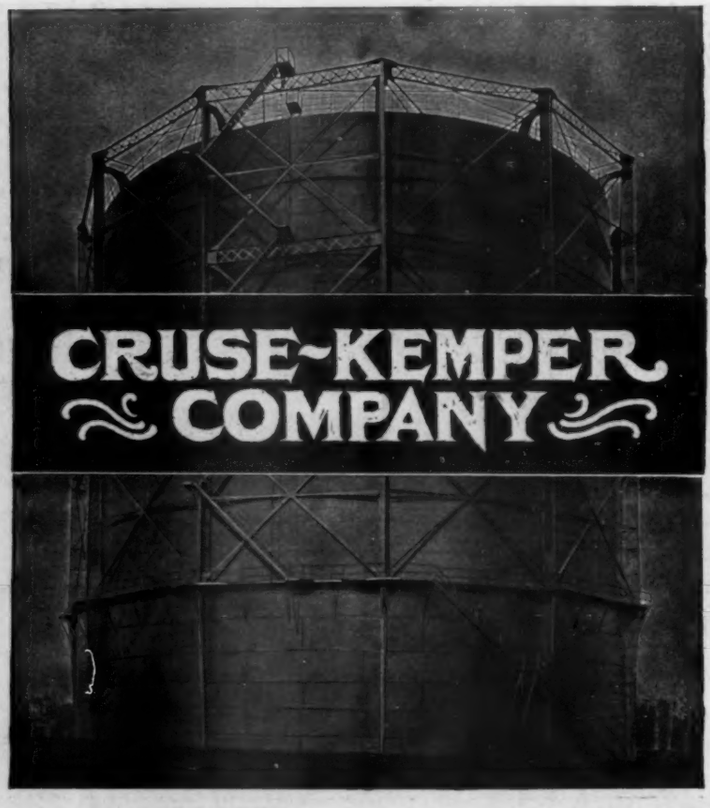
RITER-CONLEY MFG. COMPANY,

PITTSBURGH.

PLATE AND STRUCTURAL WORK OF EVERY DESCRIPTION.

COMPLETE COAL GAS PLANTS.

GAS ENGINEERS,
BUILDERS OF
GAS HOLDERS,
PURIFIER BOXES,
CONDENSERS,
SCRUBBERS,
STEEL TANKS,
PLATE METAL CONSTRUCTION.



STEEL WATER AND TRANSMISSION TOWERS.
STEEL BUILDINGS and ROOF TRUSSES.
STRUCTURAL IRON & STEEL WORK IN GENERAL.

CRUSE-KEMPER COMPANY

OFFICE AND WORKS, - - - - AMBLER, PA.

J. S. DeHART, JR., PRESIDENT
A. F. WEHNER, SECRETARY
R. K. WEHNER, TREASURER

ISBELL-PORTER COMPANY

GAS ENGINEERS & BUILDERS OF GAS WORKS

BENCH WORK
CHARGING AND DISCHARGING MACHINERY
MACKENZIE EXHAUSTERS
PRIMARY AND SECONDARY CONDENSERS FOR FRESH OR SALT WATER

ISBELL VALVES SPECIALS
TAR EXTRACTORS
P. & A. TAR EXTRACTORS FOR WATER GAS
ROTARY AMMONIA SCRUBBERS
SHAVING SCRUBBERS PURIFIERS STREET GOVERNORS

MAIN OFFICE AND WORKS
BRIDGE & OGDEN STREETS
NEWARK, N. J.
ESTABLISHED 1865

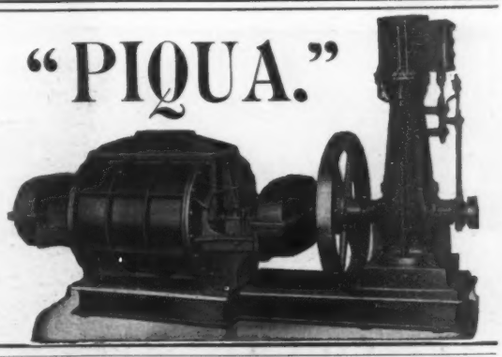
GAS EXHAUSTERS AND BLOWERS.

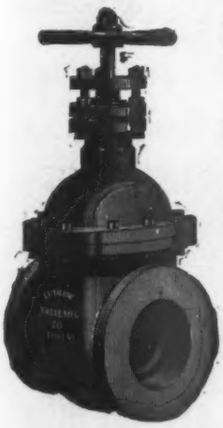
We have a full line of sizes for all standard pressures. The design, material and workmanship is A-1. Prompt Delivery and Reasonable Prices. WHY NOT give us YOUR requirements?

THE PIQUA BLOWER CO.,

PIQUA, OHIO.

"PIQUA."





THE

Ludlow Valve Mfg. Co.,

TROY, N. Y., U. S. A.

Double and Single Gate Valves, ¼" to 72",

—FOR—

Gas, Water, Steam, Oil, Ammonia, Etc.

HOT GAS VALVES A SPECIALTY.

Send for Catalogue.

QUINTARD IRON WORKS CO.,

Foot of Twelfth Street and East River, New York,

BENCH WORK,
CONDENSERS,
SHAVING SCRUBBERS,
CAST IRON FLANGED PIPE,
RIVETED STEEL PIPE.

FREDERICK W FLOYD, Engineer.

ESTABLISHED 1866.

HENRY MAURER & SON,

Manufacturers of

High Grade Firebrick, Blocks, Tiles,

ETC.,

Works: Maurer, N. J. Office: 420 E. 23d St., N. Y. City.

L. C. HAMLINK, PRES. AUGUST COURT, SEC'Y.

GAS BENCH CONSTRUCTION COMPANY,

METROPOLITAN BUILDING, ST. LOUIS, MO.,

Engineers and Builders of all styles of Standard and Special Benches from one to twelve Retorts, Horizontal, Vertical, or Inclined.

We will guarantee "Better Benches," to be easier to control, make more gas per retort, and operate with less fuel than any bench on the market.

ALL WORKMANSHIP AND MATERIAL GUARANTEED.

PRACTICAL HANDBOOK ON GAS ENGINES. WITH INSTRUCTIONS FOR CARE AND WORKING OF THE SAME,

By G. LIECKFELD, C.E. Translated with Permission of the Author, by GEORGE M. RICHMOND, M.E. Price, $1.

For Sale by AMERICAN GAS LIGHT JOURNAL, 42 Pine Street, New York City.

"IRONCLAD" DRY GAS METERS

Are equally suitable for the measurement of either Artificial or Natural Gas.

CATALOGUE 100 FREE

Pittsburg Meter Company

New York, 149 Broadway.
Chicago, 256 Madison St.
Kansas City, 6 West 10th St.
Minneapolis, 409-411 2d Av., S.

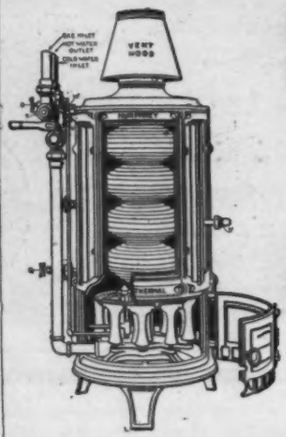
General Office and Works, East Pittsburg, Pa.

Manufacturers of Gas Meters and Water Meters

LLOYD CONSTRUCTION COMPANY

GAS APPARATUS.

DETROIT - MICHIGAN



Humphrey Auto-Thermal Instantaneous Water Heaters

Have every known desirable feature helping to efficiency, economy, durability and absolute safety.

FULLY GUARANTEED.
PRICES LOW.
QUALITY AND SERVICE HIGH.

Will you help us sell them?

HUMPHREY CO.,
Kalamazoo Mich., U. S. A.

"THE MINER"
GLOBE STREET LAMPS.

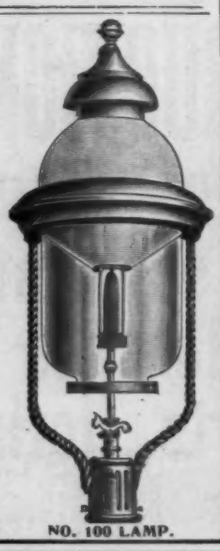
OVER FORTY YEARS IN USE THE WORLD OVER.

THE BEST STREET LAMPS for ALL KINDS OF GAS OR BURNERS.

This is only one of a Large Variety of Styles.

SEND FOR CATALOGUE.

THOS. T. W. MINER,
821 and 823 Eagle Avenue, New York.



NO. 100 LAMP.

Binder FOR THE **Journal.** PRICE, **$1.**

For Sale by A. M. CALLENDER & CO., 42 Pine Street, New York City.

THE SEVENTH EDITION, ILLUSTRATED,

— OF THE —

Handbook for Gas Engineers and Managers,

By THOMAS NEWBIGGING, M. INST. C.E.

This Edition of the "Handbook for Gas Engineers and Managers" is a great improvement on all previous editions. Much of the text has been re-written, in order to keep the work abreast of the constant advances that are being made in the Gas Industry.

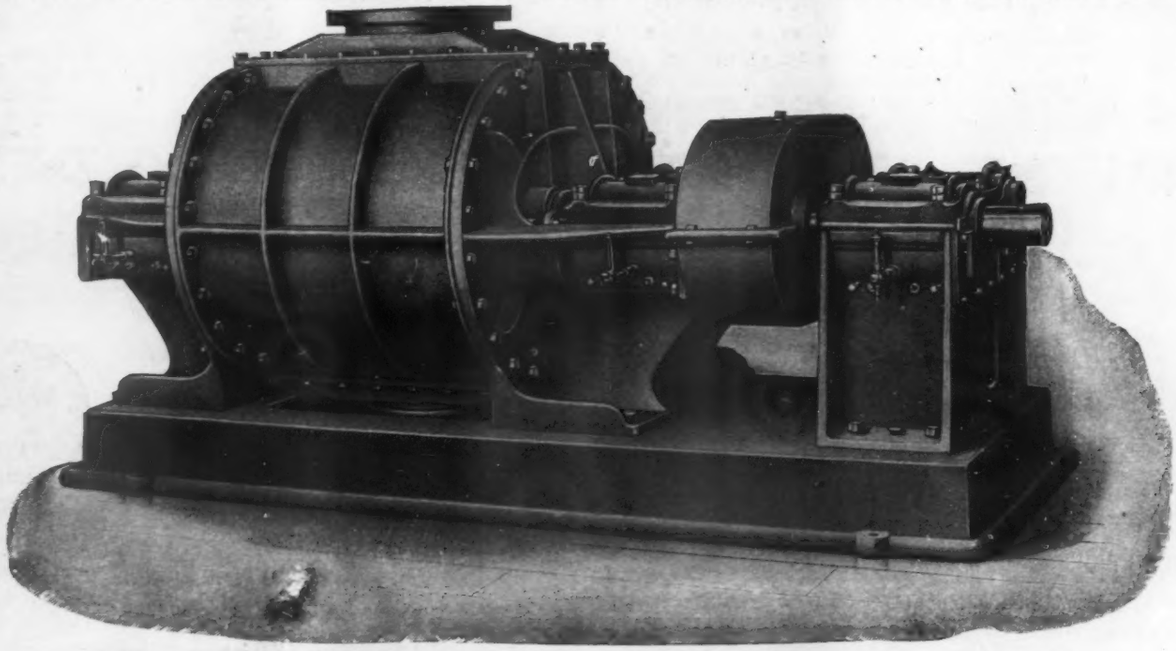
PRICE, · $6.50.

A. M. CALLENDER & CO., 42 Pine Street, New York City.

50TH ANNIVERSARY.

ROOTS' EXHAUSTERS FOR HIGH AND LOW PRESSURE WORK.

The highest efficiencies obtained. Most perfect devices for adjustment and maintenance of proper alignment. Use our flexible coupling to correct troubles caused by misalignmer t and engine shaft thrust. Our gas governor is the best. By-pass, gas valves and fittings.



P. H. & F. M. ROOTS COMPANY,

HOME OFFICE: Connersville, Ind. NEW YORK OFFICE: 120-122 Liberty St. CHICAGO OFFICE: 1547 Marquette Bldg.

SEND FOR POCKET EDITION OF "ENGINEERS' PRACTICAL REFERENCE BOOK."

The "Gas World" Analyses of Accounts of Gas Undertakings,

For 1906-1907,

Showing at a glance the Accounts of 113 Coal and Water Gas Companies, Itemized under

Coal Carbonized, Gas Made and Sold, Yield of Residuals, Public Lamps, Mileage of Mains, Consumers, Price of Gas, Illuminating Power, Financial Results, Revenue.

Manufacturing Charges, Rates and Taxes, Distribution Charges, Management Charges, Bad Debts, Capital Paid Up, Capital per Ton and per Thousand, Reserve Funds, etc.

EVERY GAS ENGINEER AND MANAGER SHOULD HAVE A COPY OF THIS INVALUABLE AND UP-TO-DATE WORK.

Price, $4. For Sale by

A. M. CALLENDER & CO., 42 PINE ST., NEW YORK CITY.

Gas Analyst's Manual,

By JAQUES ABADY, M. Inst. Mech. E.

(Incorporating F. W. Hartley's "Gas Analyst's Manual" and "Gas Measurement.")

Ninety-three Illustrations and Nine Folding Plates.

Bound in Handsome Half Leather. Price, - $6.50.

FOR SALE BY

A. M. CALLENDER & CO., - - 42 Pine Street, New York City

BRAY UNION JETS

Recommended by the Public Service Commission.

The following appeared in THE NEW YORK TIMES January 24, 1909:

"The Public Service Commission for the Second District, in its second annual report, call attention to the following:

"**Metal Tips should never be placed on burners, as they waste gas.** The conclusion is reached from a study of all the various factors which enter into the ideal burner and after an examination of the comparative merits that the BRAY UNION JET IS SUPERIOR FOR GENERAL USES."

"THE CONSOLIDATED GAS CO., OF NEW YORK, Gave 329,397 Bray Burners to their consumers in 1908."

W. M. CRANE COMPANY,

SOLE AGENTS.

New Address: 16, 18 & 20 West 32d Street, New York.

GEO. E. ORMROD, Pres. & Treas. JOHN D. ORMROD, Supt.
J. G. EBERLEIN, Secretary.

EMAUS PIPE FOUNDRY.

DONALDSON IRON COMPANY. EMAUS, PA.

MANUFACTURERS OF

CAST IRON PIPE AND SPECIAL CASTINGS

FOR WATER AND GAS.

Also, FLANGE PIPE, LAMP POSTS, Etc.

TRADE MARK

BRISTOL'S

REG. U. S. PAT. OFFICE.

RECORDING GAUGES

For All Commercial Ranges of

PRESSURE AND VACUUM.

Write for New Preliminary Bulletin No. 104.

BRANCH OFFICES: { New York. Chicago. } THE BRISTOL CO., WATERBURY, CONN.

MODERN GAS ENGINES and PRODUCER GAS PLANTS,

By R. MATHOT, M.E.,

Containing a Preface by DUGALD CLERK, F.C.S., Indorsing the Book.

A PRACTICAL Treatise of 320 pages, Fully Illustrated by 175 Detail Illustrations, Setting Forth the Principles of Gas Engines and Producer Design, the Selection and Installation of an Engine, Conditions of Perfect Operation, Producer Gas Engines and their Possibilities, the Care of Gas Engines and Producer Gas Plants, with a Chapter on Volatile Hydrocarbons and Oil Engines.

Price, $2.50. For Sale by

A. M. CALLENDER & CO., - 42 Pine Street, New York City.

STANDARD REDUCTION FACTORS FOR GASES,

A Number of Tables Necessary for the Reduction of the Volume of any Gas at any Temperature, Pressure and Degree of Saturation to its Equivalent Volume under Standard Conditions,

TOGETHER WITH

A Table for the Numerical Solution of Certain Exponential Equations,

By HELON BROOKS MacFARLAND, B.S., M.M.E.,

Associate Professor of Applied Mechanics, Department of Mechanical Engineering, Armour Institute of Technology, Chicago, Ills.

PRICE, $1.50. For Sale by

AMERICAN GAS LIGHT JOURNAL, 42 Pine Street, New York City.

AMERICAN METER CO.,

NEW YORK, ST. LOUIS, PHILADELPHIA, SAN FRANCISCO, CHICAGO,

Photometrical and Experimental Apparatus.

PUBLIC LIGHTING TABLE.

JULY, 1909.

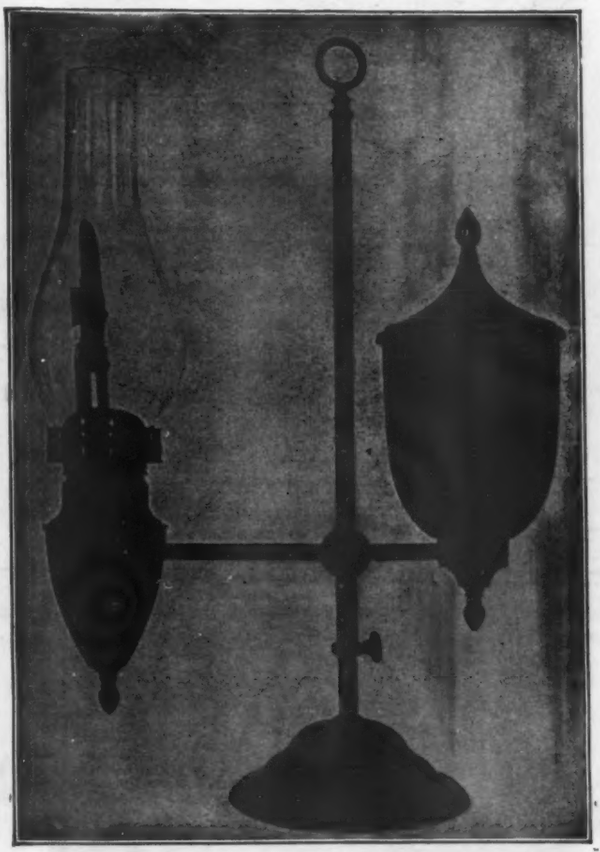
Table No. 1.
FOLLOWING THE MOON.

Day of Week.	Date.	Light.	Extinguish.
Thu.	1	2.30AM	3.30AM
Fri.	2	No L.	No L.
Sat.	3	No L FM	No L.
Sun.	4	No L.	No L.
Mon.	5	8 00PM	10.40PM
Tue.	6	8.00	11.20
Wed.	7	8.00	11.50
Thu.	8	8.00	12 20AM
Fri.	9	8.00LQ	12.50
Sat.	10	8.00	1.20
Sun.	11	8.00	1.50
Mon.	12	8.00	2.20
Tue.	13	8.00	3.40
Wed.	14	8.00	3.40
Thu.	15	8.00	3 40
Fri.	16	8.00NM	3.40
Sat.	17	8.00	3 40
Sun.	18	8.00	3.50
Mon.	19	8 00	3.50
Tue.	20	8.00	3.50
Wed.	21	9.10	3.50
Thu.	22	9.30	3.50
Fri.	23	9.50	3.50
Sat.	24	10.20	3.50
Sun.	25	10.40FQ	3.50
Mon.	26	11.10	3.50
Tue.	27	11.40	3.50
Wed.	28	12.20AM	3 50
Thu.	29	1.10	3.50
Fri.	30	2.10	3.50
Sat.	31	No L.	No L.

TOTAL HOURS DURING 1909.

By Table No. 1.

	Hrs.Min.
January	212.20
February	183.40
March	173.00
April	151.10
May	144.10
June	138.50
July	145.40
August	160.30
September	180.00
October	201.00
November	216.30
December	233.40
Total, yr.	2140.30



THE ELLIOTT KEROSENE STANDARD PHOTOMETER LAMP.

***

10-Candle Power.

***

This lamp is a perfect substitute for the 10-candle Pentane Lamp hitherto used, and has the following advantages:

1st. It uses Standard Kerosene Oil (Pratt's Astral Oil or equivalent).

2d. It is remarkably steady. Will burn 24 hours continuously with less than 2 per cent. variation.

3d. It is much less dangerous than Pentane, which is a kind of gasolene.

4th. It is not easily affected by air currents in the photometer room.

5th. Since the lamp may burn continuously, the candle power of gas may be taken at any moment, if necessary. This insures steady illuminating power without waste of carburetting material.

6th. The first cost of the lamp brings it within the reach of even small gas works.

7th. Costs much less to maintain than a Pentane lamp or sperm candles doing the same service.

8th. Is not affected by the weather.

PUBLIC LIGHTING TABLE.

JULY, 1909.

Table No. 2.
NEW YORK CITY.
ALL NIGHT LIGHTING.

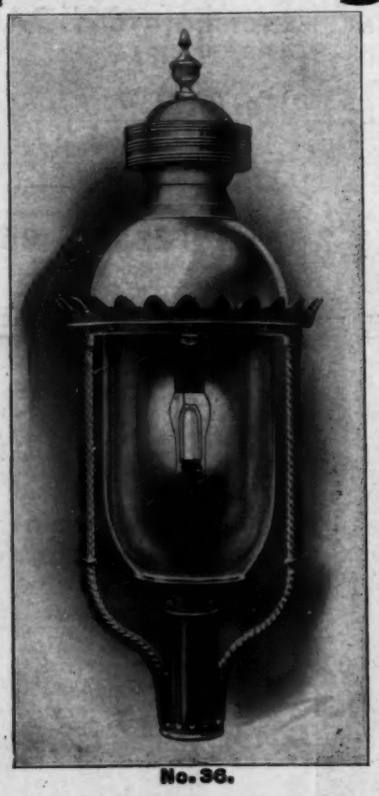
Day of Week.	Date.	Complete Lighting in One Hour From Time Given P. M.	Complete Extinguishing in 50 Minutes From Time Given A.M.
Thu.	1	7.27	3.07
Fri.	2	7.22	3.07
Sat.	3	7.22	3 07
Sun.	4	7.22	3 07
Mon.	5	7.22	3 07
Tue.	6	7.22	3.07
Wed.	7	7.22	3.07
Thu.	8	7.22	3.07
Fri.	9	7.17	3.12
Sat.	10	7.17	3.12
Sun.	11	7.17	3.12
Mon.	12	7.17	3.12
Tue.	13	7.17	3.12
Wed.	14	7.17	3.12
Thu.	15	7.17	3.12
Fri.	16	7.12	3.17
Sat.	17	7.12	3.17
Sun.	18	7.12	3.17
Mon.	19	7.12	3.17
Tue.	20	7.12	3.17
Wed.	21	7.12	3.17
Thu.	22	7.12	3.17
Fri.	23	7.07	3.22
Sat.	24	7.07	3 22
Sun.	25	7.07	3.22
Mon.	26	7.07	3.22
Tue.	27	7.07	3.22
Wed.	28	7.07	3.22
Thu.	29	7.07	3.22
Fri.	30	7.02	3.27
Sat.	31	7.02	3.27

TOTAL HOURS DURING 1909.

	Hrs.Min.
January	428.30
February	358.15
March	353.10
April	298.10
May	263.20
June	234.45
July	248.30
August	278.00
September	311.25
October	370.05
November	397.40
December	438.35
	3980.25
Deduct on account of 50 min. extinguishing time	30.25
Total, yr.	3950.00

NEW YORK, 318 West 42d Street.
BOSTON, 820 Beacon Building.
PHILADELPHIA, Broad and Arch Streets.
ST. LOUIS, 712 Roe Building.
CHICAGO, 218 La Salle Street.
SAN FRANCISCO, 512 Oak Street.

WELSBACH STREET LIGHTING COMPANY



No. 36.

....OF AMERICA....

Controls and Operates the **Welsbach System of Street Lighting,**

Which includes its specially DESIGNED and PATENTED BURNER for PARK LIGHTING exclusively.

Uniformly SUCCESSFUL in 150 Cities and Towns.

By means of the Welsbach System of street lighting the superiority of GAS over electricity for street lighting has been fully demonstrated.

POINTS OF MERIT:

It is { Economical, Attractive, Successful, Up-to-date.

IT LIGHTS THE STREET.

Where there are no gas mains we can furnish an equally good light by our SELF-GENERATING NAPHTHA WELSBACH BURNER, and thereby supply a uniform light in all localities.

Correspondence Solicited from Gas Companies and Others interested in Municipal and Outside Lighting.

No. 38.

Welsbach Junior

THE BIGGEST LITTLE LIGHT IN THE WORLD.

The Welsbach Junior Light is 5 inches high--consists of burner, mantle and chimney--and is attractively boxed in a pasteboard carton.

As its effectiveness and economy become better known the Welsbach Junior will supersede, for universal use in the home, the old-style open flame gas burners.

Showing Welsbach Junior Light used in connection with ordinary glass globe.

Gives 50-Candle Power.

Uses Two Feet of Gas per Hour.

Attaches to Any Gas Fixture.

Completely Hidden from View.

Use your own globe--either gas or electric.

SMALL—EFFICIENT—ECONOMICAL.

Welsbach Company, FACTORIES: Gloucester, N. J. Columbus, O.

Salesrooms in all Leading Cities of the United States.

The United Gas Improvement Company,

Broad and Arch Streets, Philadelphia.

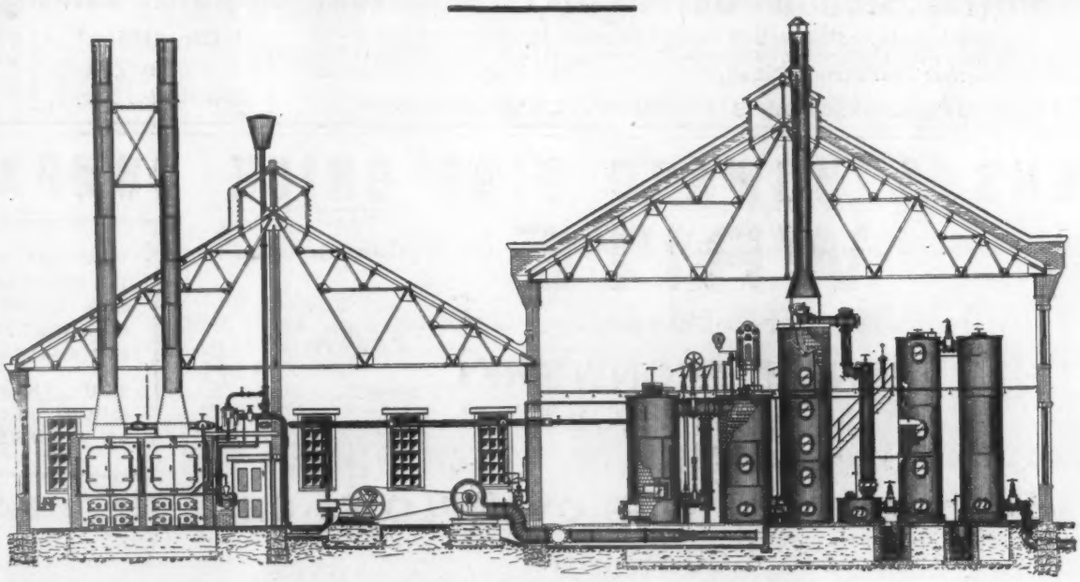
LESSEES, OPERATORS AND BUILDERS OF **GAS WORKS.**

Largest Builders of CARBURETTED WATER GAS PLANT IN AMERICA.

SOLE AMERICAN BUILDERS

OF THE

Standard Double-Superheater Lowe Water Gas Apparatus.



TOTAL SETS INSTALLED TO JULY 1, 1909, ... 704
TOTAL DAILY CAPACITY TO JULY 1, 1909, ... 577,440,000 cu. ft.

Tar Extractors for Carburetted Water Gas.
Photometrical Apparatus.
Gas Analysis Apparatus.
Recording Gauges.
Straight Standpipe System for Coal Gas Retorts.
Straight Standpipe Cleaners.
Waste Heat Boiler.
Hygrometer.
Meters for Regulating Air and Steam Supply to Water Gas Apparatus

Established 1858. Incorporated 1890.
CHAS. E. GREGORY, Prest. DAVID R. DALY, V.-Prest. & Treas.
H. D. ABERNETHY, Sec.

J. H. Gautier & Co.

Greene & Essex Streets,
Jersey City, N. J.

MANUFACTURERS OF

CLAY GAS RETORTS, FIRE CLAY TILES, FIRE BRICK and FIRE CLAY SPECIALTIES.

Ground Fire Clay, Fire Sand and Ground Fire Brick in Barrels and Bulk.

SOLE MANUFACTURERS OF THE

FLEMMING GENERATOR GAS FURNACE

GEROULD'S IMPROVED RETORT CEMENT.

A Cement of great value for patching retorts, putting on mouthpieces, making up all bench-work joints, lining blast furnaces and cupolas. This cement is mixed ready for use. Economic and thorough in its work. Fully warranted to stick.

Price List, f.o.b. NEW CASTLE, PA.

In Casks, 400 to 800 pounds, at 5 cents per pound.
In Kegs, 100 to 300 " " 6 " "
In Kegs less than 100 " " 7 " "

C. L. GEROULD,
29 North Mill St., New Castle, Pa.

KRATER-DINAS RETORT CEMENT.

Universally accepted to be the best cement for patching and repairing retorts, making up bench work, etc. Advantages: Powdered form; only mix with water; no waste; too much mixed, apply water and use the next time; adheres very easy; does *not* fall out by decarbonization. We guarantee or take back. Many re-orders and recommendations from America, Germany, France, Belgium, etc. Write for price and testimonials.

STRASSBURGER BROS., Sole Importers,
563 Lincoln Avenue, Chicago, Ills.

"BEST BY TEST."

ESTABLISHED 1868.

L. N. RANCKE, V. Pres. & Mgr. E. L. RIEHA, Engineer.

BALTIMORE RETORT & FIREBRICK CO.

BALTIMORE, MD.

HIGH GRADE FIRECLAY MATERIAL FOR ALL PURPOSES.

DESIGNERS AND BUILDERS OF

BENCH CONSTRUCTIONS of the MOST DURABLE and EFFICIENT TYPE, WITH EITHER HORIZONTAL, INCLINED OR VERTICAL RETORTS.

SUPERIOR GRADE LININGS AND CHECKERBRICK FOR WATER GAS SETS.

WE SOLICIT YOUR INQUIRIES.

WALDO BROS., 102 Milk St., BOSTON, MASS.,
AGENTS FOR NEW ENGLAND STATES.

LARGE MODERN FACILITIES.
RAIL AND WATER CONNECTIONS TO ALL POINTS.

JOHN DELL,
President and General Manager.

MISSOURI FIRE BRICK CO.,

ESTABLISHED 1882.

MANUFACTURERS OF

Gas Retorts, Bench Settings, Fire Brick, Cupola Linings, Etc.

We are the Exclusive Agents *for the* Mitchell Patent Benches, *Constructed with Half or Full Depth Furnaces, to Burn either Coal or Coke, and Arranged for Front or* Rear Clinkering. The Mitchell *is the* Original Coal Firing Bench. *We also Erect Plain Benches with* One *to* Six Retorts.

YOUR CORRESPONDENCE IS RESPECTFULLY SOLICITED.

City Office: *411 Olive Street, Continental Bank,* ST. LOUIS, MO.

EVENS & HOWARD FIRE BRICK COMPANY.

WRITE

For Particulars of Improved Designs.

BENCH IRONWORK,
MOUTHPIECES,
MAINS,

FURNACE CASTINGS, TAR OVERFLOW, SEAL REGULATORS.

ST. LOUIS, MO.

YOU ARE NOW ABLE TO CONTRACT WITH ONE COMPANY FOR MANUFACTURE of EVERY PART of a BENCH.

YOU THUS GET A MUCH BETTER JOB AT A LOWER PRICE.

GAS WORKS DIVISION:
A. S. B. LITTLE, Engineer.

EXPERT INSPECTION of Holders and Other Structures During Construction.
ECONOMIC DESIGN of Steel Structures, Reinforced Concrete, Masonry and Foundations.
CHAMBERS & HONE, Consulting Engineers, ... 1 Liberty Street, New York City.

POOLE ON FUELS.

THE CALORIFIC POWER OF FUELS.

WITH A VERY FULL COLLECTION OF TABLES OF HEATS OF COMBUSTION OF FUELS, SOLID, LIQUID AND GASEOUS.

TO WHICH IS ALSO APPENDED

THE REPORT OF THE COMMITTEE ON BOILER TESTS OF THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS, DECEMBER (1897); TABLES OF CONSTANTS USED.

By HERMAN POOLE, F.C.S.

Second Edition. Price $8. For Sale by

A. M. CALLENDER & CO. - - No. 42 Pine Street, New York City.

Bronder Patent Stoking Machinery.

Three-Scoop and Three-Rake Charging and Discharging Machines are operating in New York, Newark, N. J., Philadelphia, Worcester, Mass., Mt. Vernon, N. Y., Toronto and Montreal, Canada, Detroit, Seattle, Rochester and St. Louis.

Four-Scoop and Four-Rake Charging and Discharging Machines are operating in Detroit, Mich., and Cincinnati, Ohio. These are the only machines that will draw or charge simultaneously 3 or 4 retorts (vertically) and handle from 42 to 60 retorts in from 25 to 30 minutes, lid opening and closing and filling of furnaces included.

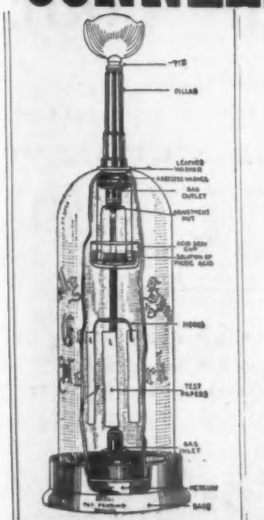
Hot Coke Conveyor, Quencher and Steam Exhauster, operating in Toronto, Canada, working in water-sealed flue, rollers being protected from heat and grit.

COAL CRUSHERS, CONVEYORS AND BINS. TURNTABLES FOR MACHINES.

Labor-Saving Machines for Handling Coal and Coke from Coal Cars to Coke Yard or Bins. Coke Screening and Measuring Plants a Specialty.

G. A. BRONDER,
Contracting Engineer and Builder,
229 BROADWAY, NEW YORK.

CONNELLY IRON SPONGE AND GOVERNOR CO.,



SULPHUR TESTER.

Automatic, Balance, High Pressure and Service Governors,
Unison Telemetric Pressure Gauge,
Iron Sponge, Purifying Material for Gas Purification, Manufacturers of Jones Jet Photometers, The National Smoke and Ammonia Helmet, Sulphur Testers, High and Low Pressure House Governors.

Wide Experience in High Pressure Installation and Extension.

PACIFIC COAST AGENT: VAN E. BRITTON, SAN FRANCISCO, CAL.

50 CHURCH ST., NEW YORK CITY.
295 WEST 22D ST., CHICAGO, ILLS.

12-Inch High Pressure Governor.

REYNOLDS' GAS REGULATOR COMPANY,

ANDERSON, IND., U. S. A.

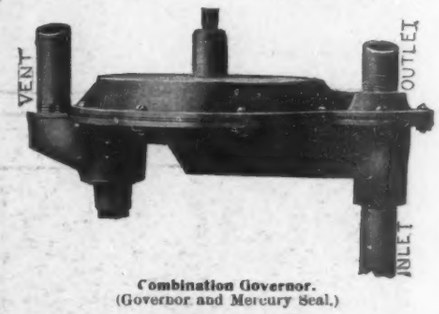
We make all sizes for all classes of reduction,

Double and Single District Stations,
And Individual Service Governors for Reducing High Pressure.

HOLDER GOVERNORS
And Low Pressure Regulators, all of the Dry Diaphragm type.

English Agents:
THE BRYAN DONKIN CO., LTD., Chesterfield, England.

Write for Catalog.



Combination Governor.
(Governor and Mercury Seal.)

Newbigging's Handbook for Gas Engineers and Managers.

Price, $6.50. For Sale by
A. M. CALLENDER & CO., 42 PINE ST., NEW YORK CITY.

COAL TAR AND AMMONIA,

By GEORGE LUNGE, PH.D. Third and Enlarged Edition.
Price, $15. For Sale by
A. M. CALLENDER & CO., 42 Pine Street New York City.

JAMES D. PERKINS, President. F. SEAVERNS, Treasurer.

THE PERKINS COMPANY,

228 and 229 Produce Exchange, New York City.

OCEAN MINE YOUGHIOGHENY GAS COAL,
OLD KENTUCKY SHALE AND O. K. BOGHEAD.

BERWIND-WHITE COAL MINING COMPANY'S

Ocean Westmoreland Gas Coal.

Offices:
Washington Building, New York.
Betz Building, Philadelphia.

STRICTLY High Grade. . . . .
Carefully Prepared.
For Gas Making or
Heavy Steaming.

A. C. M. AZOY, General Agent, 1 Broadway, New York.

ISAAC C. BAXTER, President. ESTABLISHED 1864. PETER YOUNG, Secretary and Treasurer.

Works.
LOCKPORT STATION, PA.

JAMES GARDNER, JR., CO.,
Successor to WILLIAM GARDNER & SON.

Address all communications to
JAMES GARDNER, JR., CO., Bolivar, Pa.

Fire Clay Goods for Gas Works.

Double Gate Valves.

A LARGE STOCK ON HAND READY FOR PROMPT SHIPMENT.

These valves are provided with double discs or gates, and are tight with the gas pressure on either side of them.

The discs are so arranged as to be free from their seats when being opened or closed, and are operated by a quick-acting mechanism. The valve stem extends outside of the bonnet, and serves as an index, showing whether the valve is closed or open, and the amount of opening. They are made of the following dimensions:

Size.....	8 inches	10 inches	12 inches	16 inches	20 inches	24 inches	30 inches	36 inches
Diameter of flanges....	13 inches	16 inches	18 inches	22½ inches	27 inches	31 inches	31½ inches	44 inches
Face to face of flange...	12 inches	12 inches	12 inches	14 inches	17 inches	20 inches	21 inches	23¾ inches

For price and other information, apply to

THE CONTINENTAL IRON WORKS,
P. O. STATION G. NEW YORK (BOROUGH OF BROOK

Directory of American Gas Companies, 1908.

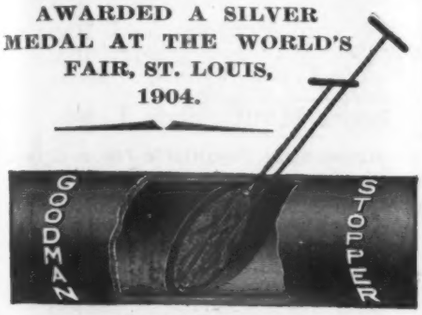
Price, $5.00.
For Sale by
A. M. Callender & Co., 42 Pine St., N. Y.

KELLER ADJUSTABLE COKE CRUSHER.

Strong, Simple, Durable. Will Crush any Size Desired.

C. M. KELLER,
Columbus, Ind.
Correspondence Solicited.

AWARDED A SILVER MEDAL AT THE WORLD'S FAIR, ST. LOUIS, 1904.



AGENTS.

Pacific Coast—VAN E. BRITTON, 269 Monadnock Building, San Francisco, Cal.

Great Britain—PARKER & LESTER, Old Kent Road, London.

MANUFACTURED BY

SAFETY GAS MAIN STOPPER CO.,

257-263 East 133d Street,
NEW YORK CITY.

PATENTS, TRADE MARKS, COPYRIGHTS.

ROYAL E. BURNHAM,

Solicitor of Patents and Counsellor in Patent Causes.

833 Bond Building, Washington, D. C.

Send for Pamphlet on Patents.

EDMUND H. McCULLOUGH, President. H. C. ADAMS, 1st Vice-President. CHAS. F. GODSHALL, 2d Vice-Pres. & Treas. HENRY WHARTON, Secretary. C. B. NICHOLS, Assistant Secretary.

THE WESTMORELAND COAL CO.

Chartered 1854.

Mines situated on the Pennsylvania and the Baltimore and Ohio Railroads, in Westmoreland County, Pa.

POINTS OF SHIPMENT:

PHILADELPHIA, BALTIMORE, SOUTH AMBOY, N. J., WATKINS (SENECA LAKE), N. Y.

Since the commencement of operations by this Company its well-known Coal has been largely used by the Gas Companies of New England and the Middle States, and its character is established as having no superior in gas-giving qualities, and in freedom from sulphur and other impurities.

Principal Office, 224 South 3d St., Phila., Pa.

GAS MAINS—SERVICE PIPES.

Their installation for High or Low Pressure is the work in which we have specialized for years. Because of our Facilities and Experience, many Gas Companies prefer to contract with us for such work, rather than to execute it themselves. It proves to be as cheap in the end. We solicit inquiries.

Telephone Connection.

SULLIVAN BROS.,
11 Main St., Flushing, N. Y.

JOHN CABOT, President. GEO. D. CABOT, Secretary.

1412-1428 Adams Street, Hoboken, N. J.

PURIFIER AND SCRUBBER TRAYS.

Church's Patent Trays,

Reversible; Strongest; Most Easily Repaired.

We also Supply the Cheapest and Strongest

Reversible Bolted Trays.

Special Trays for Iron Oxide in Either Style.

GAS TAPPING MACHINES

—FOR—

Drilling and Tapping Pipe under Pressure

WITHOUT ANY ESCAPE OF GAS.

They are Strong and Compact.

Size of Combination Drills and Taps ¾ to 4-Inch.

Machines Sent to any Gas Company for Thirty Days' Trial.

Send for Circulars.

Geo. Light,
DAYTON, O.

Standard Oil Company,

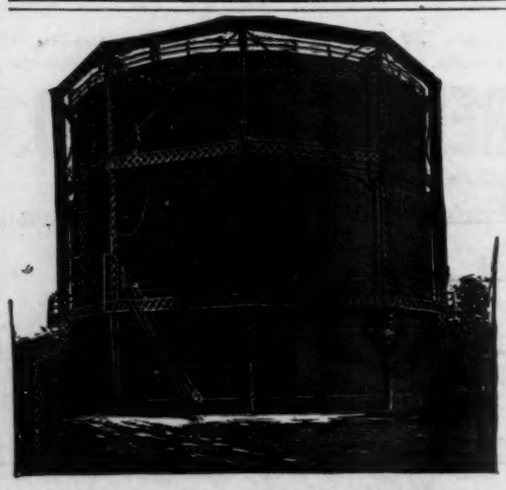
GAS NAPTHA DEPARTMENT.

GAS NAPTHA.

GAS OIL.

Correspondence Solicited.

26 Broadway, New York City.



DAVIS & FARNUM MFG. CO.,
Principal Office and Works, Waltham, Mass.

Single, Double and Triple-Lift Gasholders of any Capacity. Tubular, Pipe and Sinuous Friction Condensers of all Sizes.

Steel Tanks for Gasholders, Iron Roof Frames and Floors, Purifying Boxes, Center Seal or Valve Connections, Bench Work, Reversible Lime Trays.

Self-Sealing and Pressed Steel Mouthpiece Lids.

Coke Barrows, Coal Wagons, and all Apparatus Requisite for a Complete Gas Works.

Also, Gas and Water Pipe, Flanged Pipe, Sugar House Work, and Special Castings of all Descriptions.

H. M. BYLLESBY & COMPANY
(INCORPORATED).

GAS ENGINEERS,

DESIGN, CONSTRUCT AND OPERATE
COMPLETE COAL, WATER AND CRUDE OIL GAS PLANTS.

EXAMINATIONS AND REPORTS.

AMERICAN TRUST BUILDING
CHICAGO.

Oklahoma City, Okla. Mobile, Ala. San Diego, Cal.

ALEX. C. HUMPHREYS, President.
WM. W. RANDOLPH, Vice-President.
EMILE GUILLAUDEU, Treasurer.
ROBT. O. LUQUEER, Secretary.
HOWARD E. WHITE, General Counsel.

EUROPEAN CORRESPONDENTS.
HUMPHREYS & GLASGOW,
LONDON. — BRUSSELS.

HUMPHREYS & GLASGOW, INC.,
CONSULTING ENGINEERS.

ADVICE AS TO EXTENSION, MANAGEMENT AND RECONSTRUCTION OF GAS AND ELECTRIC PLANTS.

COMPLETE EXAMINATIONS MADE. ~ ~ ~ PROPERTIES PURCHASED.

CITY INVESTING BUILDING, 165 BROADWAY, NEW YORK.

"Industrial" Railway over Coal Storage, Ann Arbor Gas Company. This railway is also used to handle the cooled coke from the quenching chutes to the wooden storage bins.

"HUNT" LABOR-SAVING MACHINERY FOR GAS WORKS.

McDONALD-MANN QUENCHING CHUTES,

By which

The coke is quenched and dried in seven minutes.

Percentage of moisture does not exceed 6.6 per cent.

Breeze less than 4.5 per cent. after passing over the sizing screen.

Gas Engineers are particularly invited and requested to visit any of the Gas works equipped with our machinery easy of access from their vicinity.

Write for Bulletin A-1.

C. W. HUNT COMPANY,

WEST NEW BRIGHTON N. Y. NEW YORK OFFICE, 45 BROADWAY.

HENRY I. LEA,
GAS ENGINEER.

DESIGN, CONSTRUCTION AND MANAGEMENT OF GAS PLANTS.

EXAMINATIONS AND REPORTS.

THE ROOKERY, CHICAGO.

FIELD'S ANALYSIS FOR THE YEAR 1907.

An Analysis of the Principal Gas Undertakings in England, Scotland and Ireland; being the 39th year of publication. Compiled and arranged by JOHN W. FIELD, Sec'y and Gen. Mgr. of The Gas Light and Coke Company, London. Price, $5. For Sale by AMERICAN GAS LIGHT JOURNAL, 42 Pine St., N. Y. City.

The Bartlett-Hayward Company,

Baltimore, Md. 100 Broadway, New York.

GASHOLDERS,

Coal and Water Gas Plants.

Western Representative: W. A. BAEHR, Commercial National Bank Building, Chicago, Ills.

KERR MURRAY MANUFACTURING COMPANY,

Engineers and Manufacturers

APPARATUS FOR COAL GAS PLANTS,

SINGLE AND DOUBLE-LIFT GASHOLDERS
AND STEEL TANKS,

Latest Improved

ROTARY EXHAUSTERS, P. & A. TAR EXTRACTORS, AMMONIA WASHERS,

CONDENSING, SCRUBBING AND PURIFYING APPARATUS.

Street Specials and Valves.

ADDRESS:

KERR MURRAY MANUFACTURING COMPANY, FORT WAYNE, IND.

R. D. WOOD & CO.,

400 CHESTNUT ST., PHILADELPHIA,

MANUFACTURERS OF

Cast Iron Pipe.

HEAVY LOAM CASTINGS,

Dunham Specials,

Hydraulic Work,

LAMP POSTS, VALVES, ETC.,

Gas Power Plants with Producers.

BUILDERS OF

Gasholders.

Single or Multiple Lifts, with or without Metal Tanks.

PURIFIERS, CONDENSERS, SCRUBBERS, BENCH WORK.

Cutler's Patent Freezing Preventer for Holder Cups.

THE FULTON GAS PRESSURE GOVERNORS

For Artificial or Natural Gas.
For District or Individual Service.

Our Improved **Duplex Sensitive Governor** for district service will reduce high pressure gas to inches of water without variation. Absolutely safe and reliable. No complicated mechanism to get out of order. No auxiliary regulators or other devices to assist the main governor required. The most simple and perfect governor ever placed on the market. We also manufacture Holder Governors, Compressor Governors and Individual Service Governors for any inlet and outlet pressure.

More than 20 years' experience with the largest gas companies. Send for Catalog.

THE CHAPLIN-FULTON MFG. CO.

VAN E. BRITTON, Pacific Coast Agent, Monadnock Bldg., San Francisco, Cal. 28-34 PENN AVE., PITTSBURGH, PA.

COAL TAR AND AMMONIA.

THIRD AND ENLARGED EDITION.

BY

GEORGE LUNGE, PH.D.

Price, $15. For Sale by

A. M. CALLENDER & CO., - - 42 Pine Street, New York City.

THE GAS ENGINEER'S POCKET-BOOK,

By HENRY O'CONNOR,

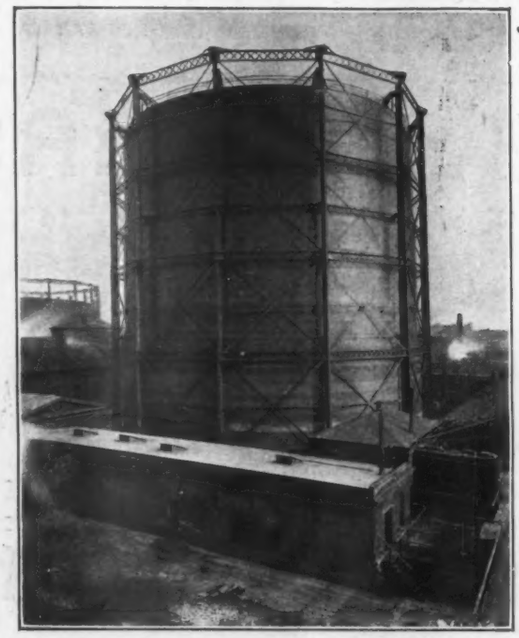
Comprising Tables, Notes and Memoranda relating to the Manufacture, Distribution and Use of Coal Gas, and the Construction of Gas Works.

PRICE, $3.50.

FOR SALE BY

A. M. CALLENDER & CO., - No. 42 Pine Street, New York City.

THE STACEY MANUFACTURING COMPANY,



GAS ENGINEERS, DESIGNERS AND BUILDERS.

GAS HOLDERS

Roofs and Structural Steel Work.
Condensers—Washers—Extractors—Purifiers.
Bench Iron—Valves—Cast Iron Fittings and Specials.
Oil, Water and Storage Tanks of Every Description.
Stacks—Stand Pipes—Etc.

"CHOLLAR'S" PATENTED SYSTEM OF GAS PURIFICATION.

GENERAL OFFICES AND WORKS:
(ELMWOOD PLACE STATION)
CINCINNATI.

WESTERN OFFICE:
718 Mission Street, - - - San Francisco, Cal.

THESE BOOKS ARE NEW.

LIQUID AND GASEOUS FUELS,
By Vivian B. Lewes.
334 pages. . . . . Price, $2.

THE GAS ENGINE,
By Forrest R. Jones. 447 pages and 142 cuts. Price, $4.

HEATING,
By W. J. Baldwin.
Price, ... $2.50.

HEAT, ENERGY AND FUELS,
By Oskar Nagel. 306 pages and 118 illustrations. Price, $3.

PRODUCER GAS AND GAS PRODUCERS,
By Samuel S. Wyer. 295 pages. Price, $4.

LAW AND BUSINESS OF ENGINEERING AND CONTRACTING,
By Charles E. Fowler. Price, $2.50.

GAS PIPING AND GAS LIGHTING,
By W. P. Gerhard.
310 pages. . . . . Price, $3.

GAS POWER,
By F. E. Junge, M.A., C.E., M.E.
548 pages. . . . . Price, $5.

GAS, GASOLINE AND OIL ENGINES,
Including Producer Gas Plants.
By Gardner D. Hiscox, M.E. Price, $2.50.

STANDARD WORKS.

GAS MANUFACTURE,
By W. J. A. Butterfield.
Price, ... $2.50.

HANDBOOK ON GAS ENGINES,
By G. E. Lieckfeld, C.E. Translated by George M. Richmond, M.E. Price, $1.

GAS AND GAS WORKS,
By Hughes and O'Connor.
Price, ... $2.50.

CHEMISTRY OF GAS MANUFACTURE,
By Harold M. Royle, F.C.S.
Price, ... $4.50.

GAS MANUFACTURE FOR STUDENTS,
By John Hornby.
Price, ... $1.50.

COAL TAR AND AMMONIA,
By George Lunge.
Price, ... $15.

GAS ANALYST'S MANUAL,
By Jacques Abady.
Price, ... $6.50.

SELF-INSTRUCTION FOR STUDENTS,
Elementary, Advanced, Constructional.
Price, ... Each, $1.50.

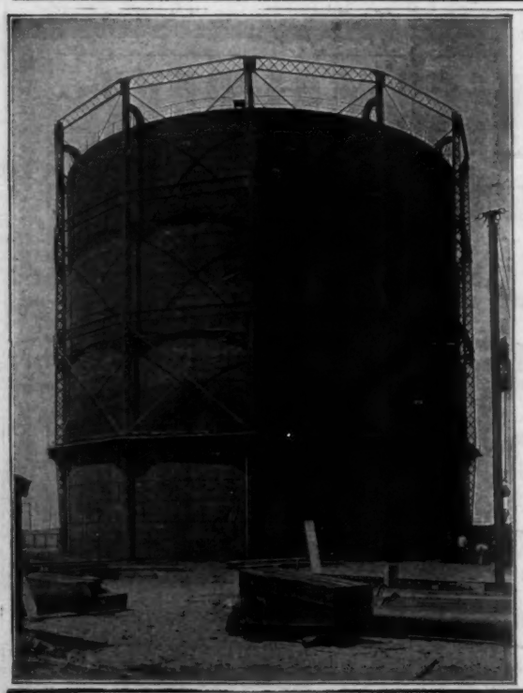
THE CALORIFIC POWER OF FUELS,
By Herman Poole.
Price, ... $3.00

MODERN RETORT SETTINGS,
By G. P. Lewis.
Price, ... $1.50.

ART OF ILLUMINATION,
By Dr. Louis Bell.
Price, ... $2.50.

GAS COMPANIES' BOOKKEEPING,
By Brearley and Taylor.
Price, ... $4.50.

We will be Glad to Furnish Any Engineering Book.
SEND CHECK, DRAFT, POST OFFICE or EXPRESS MONEY ORDER.
AMERICAN GAS LIGHT JOURNAL - - 42 PINE STREET, NEW ORK CITY.



JOHN FOWLER, President. J. SCOTT FOWLER, Vice-Pres. & Treas.

DEILY & FOWLER MFG. CO.,

39 Laurel Street, Philadelphia, Pa.

ESTABLISHED 1842. INCORPORATED, 1908.

BUILDERS OF

GASHOLDERS,

Single-Lift or Telescopic,

With or Without Steel Tanks.

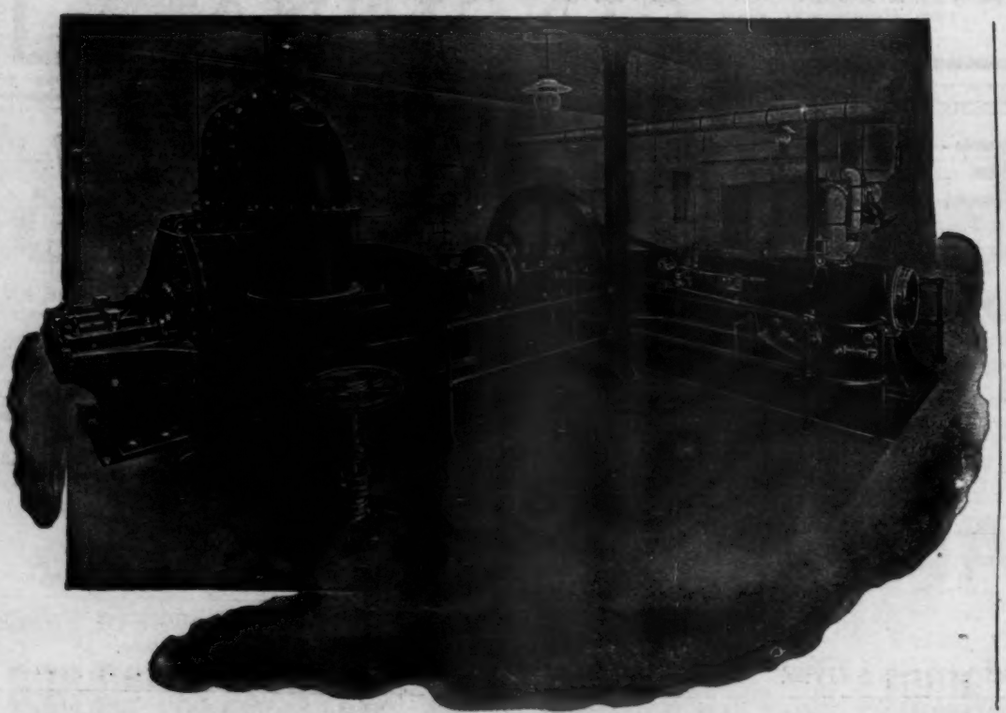
Oil Storage Tanks, Water Tanks, Etc.

ESTIMATES CHEERFULLY FURNISHED.

CORRESPONDENCE SOLICITED.

CONNERSVILLE GAS EXHAUSTERS

AND HIGH PRESSURE GAS PUMPS.



THIS cut shows one of our High Pressure machines and a 4-valve engine connected by one of our leather link flexible couplings. Two of these units were installed for the Peoples Gas Light and Coke Co., Chicago, at their 73d St. Station. Each machine has a capacity of 14,000,000 cubic feet per day.

We also manufacture

GAS VALVES,
BY-PASS VALVES,
PRESSURE REGULATORS,
ETC., ETC.

Correspondence Solicited.

THE CONNERSVILLE BLOWER COMPANY,
Connersville, Indiana, U. S. A.
NEW YORK OFFICE, 50 Church Street. - CHICAGO OFFICE, 536 Monadnock Bldg.

1908 DIRECTORY 1908

OF AMERICAN GAS COMPANIES.

Price, - - - - - - - - - $5.00.

AMERICAN GAS LIGHT JOURNAL, - 42 Pine St., New York City.

D. McDONALD & CO.,

971-997 BROADWAY, ALBANY, N. Y.,

MANUFACTURERS OF

DRY GAS METERS, STATION METERS, PREPAYMENT METERS, METER PROVERS AND GAUGES.

THE GLOVER PREPAYMENT METER,

Simple, Strong, Satisfactory.

THE HINMAN STATION METER DRUM,

The greatest advance that has been made in 20 years in the ACCURATE and ECONOMICAL measurement of gas in large quantities. :: :: ::

NEW YORK OFFICE: 561 West 47th Street. | ALBANY OFFICE: 991 Broadway. | CHICAGO OFFICE: Jefferson and Monroe Streets.

The Sprague Meter Co.

Manufacturers of

Cast Iron Gas Meters

for

Artificial or Natural Gas

Plain or Prepayment

Lower in first cost and cheaper to maintain than any meter on the market.

Write us for particulars.

The Sprague Meter Company

203 Water St., Bridgeport, Conn.

ALCOHOL, Its Manufacture from Farm Products and De-Naturing,

By F. B. WRIGHT.

A NEW AMERICAN BOOK.

CONTENTS.

Chapter 1. Alcohol, its various forms and sources.
" 2. Mashing, cooling and fermentation in general.
" 3. Distillation, simple forms of stills, the production of Alcohol from wine.
" 4. Malting.
" 5. Alcohol from Potatoes, mashing, fermentation, distillations, Continuous stills.
Chapter 6. Alcohol from Grain.
" 7. Alcohol from Beets.
" 8. Alcohol from Sorghum and Molasses.
" 9. De-natured Alcohol and its Commercial uses.
" 10. Alcoholometry. Index.

Fully Illustrated with Original Drawings of Necessary Apparatus.

PRICE, $1. For Sale by

AMERICAN GAS LIGHT JOURNAL, 42 Pine St., New York City.

NATHANIEL TUFTS METER COMPANY,

455 Commercial St., Boston, Mass.

PREPAYMENT GAS METERS,
WET AND DRY GAS METERS, STATION METERS, ETC.

REPAIRING OF ALL MAKES OF METERS, AND FITTED WITH OUR PREPAYMENT ATTACHMENT.

B

METERS.

INCREASED CAPACITY.
INCREASED EFFICIENCY.

PREPAYMENT METERS, STATION METERS, METER PROVERS, ETC.

PROMPT AND CAREFUL ATTENTION TO ALL REPAIR WORK.

MARYLAND METER COMPANY,

BALTIMORE.—CHICAGO.

YOU NEED ONE OR MORE OF OUR COMPLAINT METERS.

METERS, Plain and Prepayment,

For Artificial or Natural Gas.

Repairing All Makes and Attachments Added if Desired.

SPECIAL METERS FOR ACETYLENE.

KEYSTONE METER COMPANY,

ROYERSFORD, PA.

JUDICIOUS ECONOMY IS EFFECTED

BY USING

5-L. IMPROVED GAS METERS.

LOW SPEED, LARGE DIAPHRAGMS,
STRONGER CONSTRUCTION,
LARGER CAPACITY.

FITTED WITH

THE NEW YORK PREPAYMENT ATTACHMENT.
STEEL BOX AND CABINET LOCK.

NEW YORK IMPROVED METER CO., 306-310 East 47th St., New York City.

PACIFIC COAST REPRESENTATIVE: THE NORTHWEST GAS EQUIPMENT CO., Portland, Ore.

AMERICAN METER CO.,

NEW YORK, ST. LOUIS, PHILADELPHIA, SAN FRANCISCO, CHICAGO,

Wet and Dry Gas Meters, Station Meters, Meter Provers,
Photometrical Apparatus, Gauges,

PREPAYMENT METERS,

REGULAR METERS REFITTED WITH PREPAYMENT ATTACHMENTS.

HELME & McILHENNY,

Established 1848. **1339 to 1349 Cherry Street, Philadelphia, Pa.**

MANUFACTURERS OF

Wet and Dry Gas Meters, Station Meters, Provers, Gauges, Etc.

METERS REPAIRED

PREPAYMENT GAS METERS.

Our Own Patents. Strong. Simple. PROMPT ATTENTION. CORRESPONDENCE SOLICITED.

INLET AT TOP.

PATENTED MAY 13, 1902.

STANDARD AND SELF-DRAINING GAS METERS.

PLAIN OR PREPAYMENT FOR ARTIFICIAL OR NATURAL GAS.

LARGE CAPACITY.
LOW SPEED.
STRONG CONSTRUCTION.

REPAIRING OF ALL MAKES OF METERS.

UNITED STATES METER COMPANY,

229 to 269 Chestnut Street, Brooklyn, N. Y.

INLET AT BOTTOM.

PATENTED MAY 13, 1902.

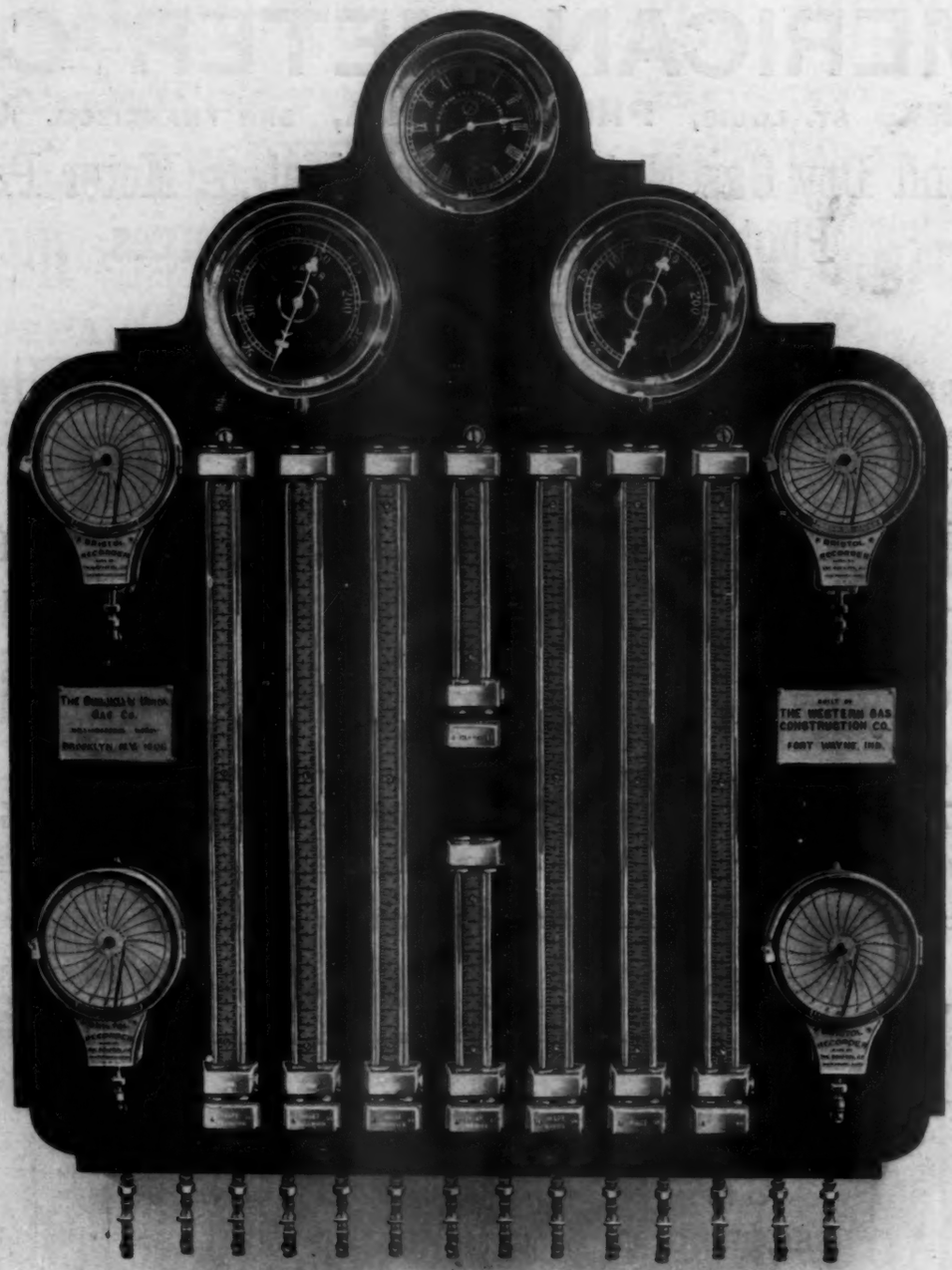
METRIC METAL COMPANY,

MAKERS OF

GAS METERS for NATURAL and ARTIFICIAL GAS.

Special Attention given to Repairing METERS of all Makes.

FACTORY AT ERIE, PA.



A SPECIMEN OF OUR HANDICRAFT.

The Western Gas Construction Company,
FORT WAYNE, IND.

NEW YORK:
25 Broad Street.

SAN FRANCISCO:
589 Howard St.